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Abstract

This study examined the association between parenting styles and mother and child anxiety. Maternal overinvolvement and negativity/criticism were evaluated during a speech preparation task ($N = 135$ dyads) and a Five Minute Speech Sample (FMSS) from mothers ($N = 155$). During the speech task interaction, mothers of anxious children (aged 4–16 years), regardless of their own anxiety, were observed to be more overinvolved than mothers of nonanxious children. Similarly, the FMSS showed that mothers of anxious children (aged 4–17 years) were more overprotective, self-sacrificing, or non-objective than mothers of nonanxious children, irrespective of maternal anxiety status. No differences in maternal negativity were found on the speech task between any of the groups. However, the FMSS showed that mothers of anxious children were more critical than mothers of nonanxious children, regardless of maternal anxiety status. These results support the relationship between overinvolved, critical parenting and child anxiety, but suggest that maternal anxiety is not associated with increased overinvolvement or criticism. Theoretical implications are discussed.

Keywords: anxiety disorders, parent-child interaction, child anxiety, maternal anxiety, parenting, expressed emotion
1. Introduction

Aetiological models of anxiety emphasize the importance of childrearing factors in the development and maintenance of anxiety disorders in children (Chorpita & Barlow, 1998; Ginsburg & Schlossberg, 2002; Hudson & Rapee, 2004; Krohne, 1990; Manassis & Bradley, 1994; Rapee, 2001; Rubin & Mills, 1991). These theories maintain that parenting characterized by control (overinvolvement/overprotection) and rejection (negativity/criticism) are associated with anxious symptomatology in children. Parents of anxious children are likely to experience anxiety themselves (Last, Hersen, Kazdin, Francis, & Grubb, 1987) which is proposed to exacerbate an overinvolved, overprotective (S. M. Bogels & Brechman-Toussaint, 2006; Cobham, 1998; Ginsburg & Schlossberg, 2002; Hudson & Rapee, 2004; Rapee, 2001) and critical (Ginsburg, Grover, Cord, & Ialongo, 2006) parenting style with anxious children, particularly after the child exhibits negative affect (Ballash, Leyfer, Buckley, & Woodruff-Borden, 2006; Woodruff-Borden, Morrow, Bourland, & Cambron, 2002). In other words, dysfunctional parenting styles may reflect, in part, the manifestation of a parent’s own anxiety (Hudson & Rapee, 2002). An anxious parent may be more likely to overprotect their child due to their own cognitive bias towards threat, increased perception of danger, and elevated sensitivity to their child’s distress (Hudson & Rapee, 2004).

Moreover, parents with high levels of anxiety may be more likely to exhibit negativity toward their child as a result of their low perceived control over their child’s anxious behaviour (Wheatcroft & Creswell, 2007). As such, Ginsburg and colleagues (2006) have suggested that high levels of anxiety in parents may lead to “anxiety-enhancing” parenting behaviours (e.g., overinvolvement, criticism) which reinforce a child’s innate vulnerability to developing an anxiety disorder. Thus, both parent and child engage in a
reciprocal relationship whereby child risk factors (e.g., early temperament) interact with maladaptive parenting styles, which are theorized to be more prominent in anxious parents, increasing the likelihood that anxiety in the child will emerge.

A vast amount of research has examined childrearing patterns and childhood anxiety. Substantial findings support the association between overinvolved parenting and child anxiety disorders, while results have been somewhat less consistent regarding the relationship between parental negativity and anxiety (See S. M. Bogels & Brechman-Toussaint, 2006; McLeod, Wood, & Weisz, 2007 for recent reviews). In contrast, research investigating the association between parental anxiety and parenting practices with anxious children has been limited. Given the potential importance of parental anxiety in increasing a child’s vulnerability to developing an anxiety disorder, an examination of the relationship between maternal behaviours and maternal anxiety will assist in informing and refining theoretical models with regard to the potential parent factors associated with child anxiety. Additionally, understanding the extent to which the presence of anxiety in mothers is related to maternal behaviour will allow for clinicians to better assess for and modify maladaptive parenting practices, ultimately leading to enhanced prevention and intervention strategies for child anxiety (Ginsburg, Silverman, & Kurtines, 1995; Hirshfeld-Becker & Biederman, 2002).

In the observational research involving clinically anxious children, self-reported maternal anxiety has not been found to be associated with increased maternal overinvolvement or negativity (Hudson & Rapee, 2001). However, questionnaire measures of mothers’ anxiety may lack validity in this population. Mothers who bring their children to anxiety clinics for treatment commonly under-report or deny their own anxiety on self-report instruments (Rapee, 2000). The mean scores of mothers’ anxiety
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in clinical child samples have often not significantly differed from the scores of mothers of non-clinical children (e.g., S. Bogels & Siqueland, 2006; Siqueland, Kendall, & Steinberg, 1996). This is incompatible with previous research which has shown that 57% of mothers presented with an anxiety disorder diagnosis at the same time that their child was being treated for anxiety (Last et al., 1987). In order to test the degree to which mothers’ anxiety is associated with parenting behaviours, it would be useful to employ diagnostic interviews to assess maternal anxiety status, rather than relying solely on the self-report data used in the majority of studies. Clinical interviews allow for the development of a relationship with mothers and as a result of skilful questioning by the clinician, respondents are more likely to admit to difficulties such as anxiety (Siqueland et al., 1996). As such, structured diagnostic interviews are considered to enhance reliability and validity in making formal diagnoses based on the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) criteria (Kendall & Flannery-Schroeder, 1998; Silverman & Ollendick, 2005).

A handful of studies employing observational designs have used diagnostic interviews to assess anxiety in parents in order to investigate the association between parenting behaviours and parental anxiety, although findings have not been consistent. One study showed that anxious mothers were more critical and less likely to encourage psychological autonomy during interactions with their children than were nonanxious mothers (Whaley, Pinto, & Sigman, 1999). On the other hand, a number of studies have found no differences in parental control/autonomy granting or negativity/criticism between anxious and nonanxious parents (Ginsburg, Grover, & Ialongo, 2004; Moore, Whaley, & Sigman, 2004; Turner, Beidel, Roberson-Nay, & Tervo, 2003; Woodruff-Borden et al., 2002). One possible explanation for the variation of findings in the
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empirical literature may be related to the fact that some studies have investigated the behaviour of anxious parents without assessing the child’s diagnostic status (or not considering it in the analyses), while others have explored the parenting styles in parents of anxious children without taking into account the parent’s anxiety diagnosis. Given the mutual dyadic influences inherent in the parent-child relationship, the interaction style is likely to be influenced by both the mother’s and the child’s diagnostic status. Only one previous study (Moore et al., 2004) has examined whether maladaptive parenting behaviours were more closely related to the child’s anxiety diagnosis, the mother’s anxiety diagnosis, or a combination of the two. The latter study was limited, however, as it used a relatively small sample size (\(N = 68\) dyads) which allowed for very few dyads in each group, particularly the group in which mothers were anxious and children were not (\(N = 8\) dyads).

The aim of the current study was to investigate the association between parenting styles as they relate to both mother and child anxiety status. This study examined maternal overinvolvement and negativity/criticism, two key parenting styles associated with child anxiety, in a speech preparation task and a Five Minute Speech Sample (FMSS) from mothers. Four groups were compared: nonanxious children with nonanxious mothers, anxious children with nonanxious mothers, nonanxious children with anxious mothers, and anxious children with anxious mothers. Based on aetiological models of anxiety (e.g., Ginsburg & Schlossberg, 2002; Hudson & Rapee, 2004), it was expected that these parenting behaviours would be associated with the child’s anxiety status as well as an interaction between the mother’s and child’s anxiety status, and would thus be highest in the group in which both mother and child were anxious.
2. Method

2.1. Participants

2.1.1. Sample 1: Speech task

The sample consisted of 135 children and their mothers. There were 32 dyads in which neither children nor mothers were anxious, 28 dyads in which children were anxious and mothers were not (14 clinic-referred, and 14 non-clinic-referred), 37 dyads in which both children and mothers were anxious (12 clinic-referred, and 25 non-clinic-referred), and 38 dyads in which children were nonanxious and mothers were anxious (all non-clinic-referred). Children were aged 4–16 years, with a mean age of 8.89 years (SD = 3.23).

The clinic-referred children were recruited from families who attended the Macquarie University Anxiety Research Unit (MUARU) for assessment and treatment of childhood anxiety in Sydney, Australia. Children were assessed by postgraduate students in clinical psychology and qualified clinical psychologists using the Anxiety Disorders Interview Schedule for DSM-IV: Child and Parent Version (ADIS: C/P; Silverman & Albano, 1996). The ADIS: C/P is a semi-structured clinical interview and is suitable for youth aged 6 years and above. Research at the MUARU has demonstrated excellent inter-rater agreement on diagnoses obtained using the ADIS-C/P (Lyneham, Abbott, & Rapee, 2007). To be eligible to participate in the study, children were required to meet criteria for a primary anxiety disorder diagnosis. Prior to commencing treatment, families were requested to voluntarily participate in the two research tasks.

The non-clinic-referred participants were recruited from the community via advertisements in local newspapers and school newsletters. The advertisement for the nonanxious children requested individuals who had never sought treatment from a
mental health professional. The advertisement targeting anxious participants requested children and/or mothers who were suffering from anxiety. Non-clinic-referred children were assessed over the telephone using the Anxiety Disorders Interview Schedule for DSM-IV: Parent Version (ADIS-P; Silverman & Albano, 1996). Telephone administration of the ADIS-P has been shown to be a valid method of accurately diagnosing individual disorders when compared to separate face-to-face interviews with the child and parent (Lyneham & Rapee, 2005). With regard to children below age six, previous research has reliably assessed psychopathology in four-year-old children using structured interviews (e.g., Rapee, Kennedy, Ingram, Edwards, & Sweeney, 2005). As well, anxiety symptoms in preschoolers have been found to reflect subtypes of anxiety broadly consistent with DSM-IV classification of anxiety disorders (Spence, Rapee, McDonald, & Ingram, 2001), and thus it was appropriate to include this measure for all ages. To be eligible to participate in the study, children were required to meet criteria for an anxiety disorder at a significant and interfering level. The non-clinical families were given $50 for participating in the study.

Maternal anxiety was assessed using the Anxiety Disorders Interview Schedule for DSM-IV (ADIS-IV; Brown, Di Nardo, & Barlow, 1994). The ADIS-IV is a semistructured clinical interview which provides differential diagnoses among the anxiety disorders according to the DSM-IV (American Psychiatric Association, 2000) criteria. No psychometric data are currently available for the ADIS-IV, however research has shown good to excellent inter-rater reliability of anxiety diagnoses obtained using the ADIS-IV-L (lifetime version) (Brown, Di Nardo, Lehman, & Campbell, 2001). All adult interviews were video or audio-taped and 25% of tapes were chosen at random and scored by a second clinician to determine diagnostic reliability.
Inter-rater reliability for the ADIS-IV was excellent ($\kappa = .88$) with respect to the mother’s primary diagnosis. Assessments were conducted on current anxiety diagnoses (any diagnosis that had occurred within the past 12 months), as it is the current status that is likely to impact most dramatically on the maintenance of the child’s anxiety. All assessments were conducted under the supervision of a senior psychologist.

The primary diagnoses of the anxious children and anxious mothers are presented in Table 1. Seventy-seven percent of anxious children were diagnosed with more than one anxiety disorder 22% met criteria for attention deficit hyperactivity disorder (ADHD), 14% for oppositional defiant disorder (ODD), and 9% for a mood disorder. In the nonanxious child sample, 10% of children met criteria for ADHD and 4% of children met criteria for ODD. Fifty-one percent of the anxious mothers were diagnosed with more than one anxiety disorder. Ten percent of the nonanxious mothers met criteria for a mood disorder.

2.1.2. Sample 2: Five Minute Speech Sample (FMSS)

The sample consisted of 155 mothers. There were 52 dyads in which neither child nor mother were anxious, 36 dyads in which children were anxious and mothers were not (32 clinic-referred, and four non-clinic-referred children), 34 dyads in which both children and mothers were anxious (23 clinic-referred, and 11 non-clinic-referred children), and 33 dyads in which children were nonanxious and mothers were anxious (all non-clinic-referred). Children were aged 4–17 years, with a mean age of 9.74 years ($SD = 3.25$). There was an overlap of 71 dyads between the two samples. The samples were not identical as a proportion of the mothers who completed the FMSS task participated in a separate study and were not included in the speech task. The source of the clinic-referred and non-clinic-referred participants in sample 2 and their assessment
of diagnoses by means of the ADIS were identical to that described above with regard to sample 1.

Seventy-six percent of the anxious children were diagnosed with more than one anxiety disorder, 23% met criteria for ADHD, 14% for ODD, and 10% for a mood disorder. In the nonanxious child sample, 8% of children met criteria for ADHD and 4% of children met criteria for ODD. Fifty-four percent of the anxious mothers were diagnosed with more than one anxiety disorder, 47% had a mood disorder, and 3% had a substance abuse disorder. Six percent of the nonanxious mothers met criteria for a mood disorder, 1% met criteria for alcohol dependence, and 1% met criteria for an adjustment disorder.

Insert Table 1 here

2.2. Tasks

2.2.1. Task 1: Speech task

Mothers and children were seated in a room while the experimenter read the following instructions prior to commencing the task:

To the child: “I’m going to ask you to prepare a (one, two or three) minute speech about anything you like. This is to see how good you are at talking in front of others. You can talk about anything – your favourite hobby, favourite film, something you did recently, a day out with your family, holiday, or something to do with school. You can change the topic during the speech if you want. So that you have lots of things to talk about, I’m going to give you three minutes to prepare before I ask you to give the speech. When I come back I’m going to ask you to stand up and give the speech.”

To the mother: “This is a test of (child’s name)’s presentation skills and social
ability. I want to see how effective she/he is at preparing a talk and presenting it to an audience. (Mother’s name) I’d like you to sit here for support. Most kids find it a bit hard to get going on deciding what to talk about. You can help (child’s name), but only if you think she/he really needs it.”

Following the instructions, the experimenter left the room for three minutes while the child prepared their speech. After the time had elapsed, the experimenter re-entered the room and asked the child to stand up and give their speech. Speech length was varied to accommodate for children of different ages. Four-year-old children were asked to prepare a one-minute speech, 5–12-year-old children were asked to prepare a two-minute speech, and 13–16-year-old adolescents were asked to prepare a three-minute speech. The pre-speech preparation time was videotaped.

The speech itself was not considered important to the study; rather, the preparation time was of primary interest. This created a mildly stressful situation in which the nature of maternal behaviour could be observed. Given the instructions suggesting that the child’s cognitive and social ability were being evaluated, the dyads were not necessarily aware that the degree and nature of parental involvement and negativity prior to the speech presentation was being evaluated and thus provided a situation in which a less biased selection of parent behaviour could be observed.

The speech preparation task was selected because a previous unpublished observational study (Jennings, 2002) showed significantly greater differences in levels of maternal involvement and negativity between mothers of anxious children and mothers of nonanxious children compared to those found on the tangram task used by Hudson and Rapee (2001). In addition, a previous study examining maternal

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1 Instructions were adapted from the tangram task used in Hudson and Rapee (2001).
expectations and attributions regarding their child’s ability to cope with a stressful situation found that a speech preparation task was able to distinguish between the parents of anxious and nonanxious children (Kortlander, Kendall, & Panichelli-Mindel, 1997). Thus, the speech preparation task was considered appropriate for eliciting the behaviours of interest, and is thought to be comparable to other tasks used in the observational research.

2.2.2. Task 2: Five Minute Speech Sample (FMSS)

The FMSS is a measure of Expressed Emotion (EE) developed by Magana, Goldstein, Karno, Miklowitz, Jenkins, and Falloon (1986). Instructions given to the mother were as follows: “I’d like to hear your thoughts and feelings about (child’s name) in your own words and without my interrupting with any questions or comments. When I ask you to begin, I’d like you to speak for five minutes, telling me what kind of person (child’s name) is and how the two of you get along together. After you begin to speak, I prefer not to answer any questions until after the five minutes.” The speech samples were audio or videotaped.

2.3. Measures

2.3.1. Observation. Task 1: Speech task

Each mother–child interaction during a three-minute pre-speech preparation period was rated on the degree of maternal involvement and negativity. The coding system was adapted from the tangram coding manual developed by Hudson and Rapee (2001). The involvement and negativity factors represent theoretically constructed and empirically tested factors (refer to Hudson & Rapee, 2001), and were designed to represent parental control (overinvolvement) and rejection (negativity).
Interactions were coded on eight global scales, each consisting of a nine-point continuum. The involvement factor consisted of the following global scales (i) general degree of mother’s involvement, (ii) degree of unsolicited help, (iii) degree to which the mother directs the child’s speech, and (iv) mother’s focus during the interaction. The involvement factor (a mean of the four scales) represented the overall measure of the degree of help the parent gave during the task. The developmental level of the child was taken into account when judging evidence of overinvolved behaviour in the mother. Coders were instructed to consider, given the child’s age, whether the mother allowed her child the opportunity to develop the speech on his/her own, or conversely whether she provided a degree of help that did not allow her child to complete the task on their own. The negativity factor assessed the degree of parental warmth during the interaction and comprised the following subscales (i) general mood – atmosphere of the interaction, (ii) mother’s degree of positive affect, (iii) mother’s tension, and (iv) mother’s degree of verbal and non-verbal encouragement and criticism. The overall negativity rating was based on a mean of the above four scales. Each of the eight scales had a scoring range of 0–8, with ratings of 0–3 used to code the less involved/more positive interactions, and ratings of 5–8 used to code the more involved/negative interactions. A rating of 4 on either scale represented a neutral category.

Coders were postgraduate students in psychology who were trained in the coding system until 80% agreement was reached. Two coders, unaware of the diagnostic status of either dyad, rated each parent–child interaction and the average score of the two ratings was used in the analyses. Intraclass correlations were calculated using Shrout and Fleiss’s (1979) model 2 (Rater’s random) to determine the inter-rater
reliability of the two raters. Inter-rater reliability for the involvement factor was ICC(2,1) = 0.80, \( p < .01 \) and for the negativity factor was ICC(2,1) = 0.75, \( p < .01 \).

2.3.2. Observation. Task 2: Five Minute Speech Sample (FMSS)

Two measurements of Expressed Emotion (EE) were taken from the FMSS according to the method described by Magana-Amato (1990): Emotional Overinvolvement (EOI) and Criticism (CRIT). A high EOI score was given based on the following scoring criteria (i) the presence of an emotional display, (ii) reports of self-sacrificing, overprotective, or lack of objective statements about the child, or a combination of two or more of the following (i) excessive detail about the past, (ii) a statement of love or willingness to do anything for the child, or (iii) exaggerated praise of the child as indicated by five or more positive remarks. Borderline EOI was rated if moderate evidence of the category was found. In acknowledgement of the possible limitations of measuring the overall EOI component in juvenile populations (McCarty & Weisz, 2002), the approach to EOI scoring was as follows. Coders scored the overall EOI component to compare with previous research using the EOI score. In addition, two of the individual scoring criteria comprising the EOI construct (overprotective/lack of objectivity/self-sacrificing and emotional display) found to be positively related to child psychopathology (McCarty & Weisz, 2002) were of interest in this study.

A high CRIT rating was given if any of the following were present (i) a negative initial statement, (ii) a negative relationship rating, (iii) one or more critical statements, or (iv) the presence of dissatisfaction. Borderline CRIT was rated if moderate evidence of the category was found. Each of the four CRIT criteria have been found to relate positively to maternal reports of child psychopathology (McCarty & Weisz, 2002), and thus the overall CRIT component was coded and analyzed.
All speech samples were video or audio-taped, transcribed, and coded. One coder was trained and certified as a reliable rater by Sybil Zaden of U.C.L.A., where the measure was developed. A second coder, who served as the primary coder, was trained until 80% agreement on the EE subgroups was reached. Forty-eight percent of FMSS’s were chosen at random and scored by the additional coder. The coding manual suggests considering including the borderline cases in the high category when coding for groups that may be reluctant to express strong attitudes about their relatives (e.g., parents of young children). Therefore, borderline-CRIT and borderline-EOI cases were included with the high category. Inter-rater agreement rates for the categories used were all in the excellent range. The kappa values were as follows: CRIT (low versus borderline–high), $\kappa = .88$; EOI (low versus borderline–high), $\kappa = .89$; EOI subscales: emotional display, $\kappa = .79$; overprotective/self-sacrificing/lack of objectivity, $\kappa = .85$. Coders were unaware of the diagnostic status of the child or mother.

2.3.3. Questionnaires.

Additional questionnaire measures were used to provide further support for the distinction between the anxious and nonanxious groups as assessed via the ADIS. To measure symptoms of child anxiety, children and mothers completed the Spence Children’s Anxiety Scale - Child and Parent Report (SCAS-P; Nauta et al., 2004; SCAS; Spence, 1998). The SCAS and the SCAS-P contain 38 anxiety items that all load on a single higher order scale (scores range from 0–114). The SCAS has demonstrated good internal consistency and test–retest reliability for the total scale (Spence, 1998). The SCAS-P has good internal consistency and has been shown to distinguish between clinically anxious and non-clinical groups of children (Nauta et al., 2004). To measure symptoms of parental anxiety, depression, and psychological tension mothers completed
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the Depression Anxiety Stress Scales (DASS; Lovibond & Lovibond, 1995). The DASS21 has demonstrated good internal consistency and concurrent validity (Antony, Bieling, Cox, Enns, & Swinson, 1998).

2.4. Procedure

On the day of the experiment, participants completed and/or returned consent forms which were signed by mothers and children over 12 years of age (children below age 12 provided verbal consent). The non-clinical families completed a battery of self-report questionnaires. Participants were then seated next to each other in a room while the experimenter read aloud the instructions for the speech task. The speech preparation time and the speech itself were recorded on video-cassette. Following the first task, children left the room and mothers completed the FMSS and adult diagnostic interview which were recorded on audio or video-cassette. Depending on the age of the child and time constraints, interviews and FMSS’s were occasionally conducted on the telephone within one week of the experiment, and were recorded using audio-recording equipment. The procedures in this study were approved by the MUARU Human Ethics Committee.

3. Results

3.1. Task 1: Speech Task

3.1.1. Preliminary Analyses

3.1.1.1. Demographics

There were no significant differences in age, gender, family income, ethnic background (the sample was predominantly Caucasian), or family composition between the four groups (See Table 2). Maternal involvement and negativity of the interactions
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were compared using t-tests. No significant differences were found between boys and girls, $t(133) = 0.78, p > .05$, $t(133) = 0.91, p > .05$, respectively.

3.1.1.2. Descriptive measures

A series of t-tests were carried out to compare questionnaire scores between the groups. To check for the possible inflation of type 1 error rate, the critical alpha was set at $p < .01$. There were no significant differences between the clinic-referred and non-clinic-referred anxious children with regard to the SCAS child or mother report, $t(52) = 1.05, p > .01$ and $t(53) = -1.93, p > .01$, respectively. The mean scores for the child and parent questionnaires appear in Table 3.

3.1.2. Comparisons Between Groups on Maternal Involvement and Negativity

Differences between the diagnostic groups on involvement and negativity were investigated using two-way analyses of variance (ANOVA). The critical alpha was set at $p < .01$ to avoid inflation of the type 1 error rate.

3.1.2.1. Involvement

A significant main effect was found for child anxiety status, $F(1, 133) = 6.62, p < .01$. In other words, mothers of anxious children were more involved than mothers of nonanxious children, regardless of the mother’s own anxiety status. There was no effect of maternal anxiety on the level of involvement, $F(1, 133) = 0.88, p > .01$ and no interaction effect, $F(1,133) = 0.19, p > .01$. Table 4 shows the means and standard deviations for maternal involvement. T-tests revealed no significant differences in
maternal involvement between the clinic-referred and non-clinic-referred anxious children in the anxious child/nonanxious mother group, \( t(25) = 1.66, p > .01 \), nor in the anxious child/anxious mother group, \( t(35) = 1.62, p > .01 \).

3.1.2.2. Negativity

There was no main effect for child anxiety status, \( F(1, 133) = 1.10, p > .01 \), no main effect for maternal anxiety status, \( F(1, 133) = 2.51, p > .01 \), and no interaction effect, \( F(1, 133) = 0.90, p > .01 \) (See Table 4). T-tests showed no significant differences in maternal negativity between the clinic-referred and non-clinic-referred anxious children in the anxious child/nonanxious mother group, \( t(25) = 1.09, p > .01 \), nor in the anxious child/anxious mother group, \( t(35) = -0.06, p > .01 \).

Insert Table 4 here

3.1.3. Age Effects

Age was not related to maternal involvement or negativity in any of the groups; all correlations were nonsignificant, \( p > .01 \). Two-way ANOVAs were used to analyze whether the findings with regard to involvement and negativity were consistent for both younger and older youth (See Table 4). Each of the four mother–child dyad groups was divided into two child age groups: 4–11 years and 12–16 years.

Regarding maternal involvement, there was a main effect for child anxiety diagnosis, \( F(1,133) = 6.61, p < .01 \), but no main effect for child age, \( F(1, 133) = .05, p > .01 \). No significant interaction effect was evident between the child’s age and the child’s anxiety diagnosis with regard to maternal involvement, \( F(1, 133) = .48, p > .01 \). That is, mothers of both the older and the younger groups of anxious children showed similar levels of overinvolvement. There was no main effect for maternal anxiety diagnosis, \( F(1, 133) = 1.01, p > .01 \). In addition, the lack of interaction in the entire sample
between the child’s anxiety and the mother’s anxiety was consistent across both age groups, $F(1, 133) = 0.28, p > .01$.

With regard to negativity, there was no main effect for child anxiety diagnosis, $F(1, 133) = 0.88, p > .01$ or for child age, $F(1, 133) = 5.24, p > .01$. As well, there was no significant interaction between the child’s age and the child’s anxiety diagnosis, $F(1, 133) = 0.00, p > .01$. No main effect was found for maternal anxiety diagnosis, $F(1, 133) = 0.00, p > .01$. The lack of interaction in the entire sample between the child’s anxiety and the mother’s anxiety was consistent across both age groups, $F(1, 133) = 1.78, p > .01$.

3.2. Task 2: Five Minute Speech Sample

3.2.1. Preliminary Analyses

3.2.1.1. Demographics

There were no significant differences in age, gender, family income, family ethnicity, or family composition between any of the groups (See Table 2). Age and gender were not related to the overall CRIT or EOI scores, nor to either of the EOI subscales, all $p$ values $> .05$.

3.2.1.2. Descriptive measures

T-tests were carried out to compare parent and child questionnaire scores between the groups (See Table 3). The critical alpha was set at $p < .01$ to avoid inflation of the type 1 error rate. There were no significant differences between the clinic-referred and non-clinic-referred anxious children with regard to the SCAS child or mother report, $t(58) = - 0.73, p > .01$ and $t(58) = - 0.42, p > .01$, respectively.
3.2.2. Comparisons Between Groups on Maternal Emotional Overinvolvement (EOI) and Criticism (CRIT)

Differences between the diagnostic groups were investigated using chi-square tests. Again, the critical alpha was set at $p < .01$ to avoid inflation of the type 1 error rate.

3.2.2.1. Emotional Overinvolvement (EOI)

Table 5 shows the frequencies of EOI and EOI subcategories for each group in the sample. Results showed no significant differences between the groups in rates of EOI, $\chi^2(3, N = 155) = 1.56, p > .01$. With regard to the individual subscales of the EOI component, emotional display was present in only three cases in the entire sample, all of which were among mothers with anxious children, $\chi^2(1, N = 155) = 3.72, p = .05$. Mothers of anxious children displayed significantly more overprotective/self-sacrificing/lack of objectivity than mothers of nonanxious children, $\chi^2(2, N = 155) = 8.68, p < .01$. No relationship was found between maternal anxiety status and overprotective/self-sacrificing/lack of objective statements, $\chi^2(2, N = 155) = 3.19, p > .01$. There were no significant differences between the clinic-referred and non-clinic-referred children within the anxious child groups on the EOI category or the EOI subcategories, $p$ values $> .01$.

3.2.2.2. Criticism (CRIT)

Results revealed that mothers were significantly more critical of anxious children than of nonanxious children, $\chi^2(1, N = 155) = 9.51, p < .01$, regardless of maternal diagnostic status. There was no main effect of maternal anxiety on the level of CRIT across the four groups, $\chi^2(1, N = 155) = 3.04, p > .01$, nor between the two groups in which the child was anxious (anxious child/nonanxious mother versus anxious
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child/anxious mother), $\chi^2(1, N = 155) = 0.00, p > .01$. There was no significant
difference in CRIT between the nonanxious child/nonanxious mother dyad compared to
the nonanxious child/anxious mother dyad, $\chi^2(1, N = 155) = 2.88, p > .01$. The results of
the CRIT construct are displayed in Table 5. There were no significant differences
between the clinic-referred and non-clinic-referred anxious children with regards to the
CRIT category.

Insert Table 5 here

4. Discussion

The current study used two tasks to investigate maternal overinvolvement and
negativity/criticism as they relate to mother and child anxiety diagnoses. Data from the
speech task demonstrated that mothers of anxious children were more overinvolved than
mothers of nonanxious children, regardless of maternal anxiety status. These findings
were consistent for younger (4–11 years) and older (12–16 years) children. Similar
results from the FMSS showed that mothers of anxious children were more
overprotective, non-objective, or self-sacrificing than mothers of nonanxious children,
whether or not the mother was anxious herself. With regard to maternal negativity, no
differences were found on the speech task between any of the groups. Results from the
FMSS, however, demonstrated that mothers of anxious children were more critical than
mothers of nonanxious children, irrespective of maternal anxiety diagnosis.

Both tasks used in this study found that maternal overinvolvement was related to
child anxiety status which supports the abundance of research demonstrating a link
between controlling parenting and anxiety (S. M. Bogels & Brechman-Toussaint, 2006).
Results, however, showed no association between maternal anxiety and maternal
Mothers and children with anxiety

overinvolvement. This finding is consistent with some previous experimental studies (Ginsburg et al., 2004; Turner et al., 2003; Woodruff-Borden et al., 2002), but appears to conflict with research by Whaley et al. (1999) which showed that anxious mothers granted less autonomy to their children compared to normal control mothers. It should be pointed out, however, that the latter study compared only three groups: nonanxious mothers with nonanxious children, anxious mothers with nonanxious children, and anxious mothers with anxious children. Thus, the only dyad with nonanxious mothers were those with nonanxious children (i.e., there was no fourth group of anxious children with nonanxious mothers). Given the possibility that children may be influential in modifying parental behaviours and attitudes (Sameroff, 1993), the impact of maternal anxiety may have been inflated in the study by Whaley et al., as it did not account for the child’s anxious behaviour which may have elicited overinvolved parenting from nonanxious mothers (See Hudson, Doyle, & Gar, 2007). Indeed, the results from the present study are consistent with findings from an expansion of Whaley et al.’s initial study which included a group of anxious children with nonanxious mothers and failed to find an effect of maternal anxiety on the level of maternal autonomy granting (Moore et al., 2004).

Results from the speech task did not show a relationship between child anxiety diagnosis and maternal negativity (i.e., criticism, low warmth). This is consistent with some previous findings (e.g., Grüner, Muris, & Merckelbach, 1999; Stubbe, Zahner, Goldstein, & Leckman, 1993), but is in contrast to other studies which showed that mothers of anxious children were less warm than mothers of nonanxious children (e.g., Hudson & Rapee, 2001; Moore et al., 2004). The speech task results also showed no relationship between maternal anxiety and maternal negativity. This finding is
Mothers and children with anxiety

consistent with most previous studies (e.g., Ginsburg et al., 2004; Moore et al., 2004; Turner et al., 2003), but is in contrast to results from the study by Whaley et al. (1999) which showed that anxious mothers were less warm than nonanxious mothers. It is important to note that the speech task coding system was designed primarily as a measure of overinvolvement and has shown poorer reliability of the negativity factor in the past (See Hudson & Rapee, 2001). Thus, it may be that the speech task was not sufficiently sensitive to detect differences in negativity between the groups.

An alternative measurement of maternal criticism was obtained from the FMSS which showed that criticism was related to child anxiety diagnosis only. That is, mothers of anxious children were more critical towards their children, regardless of whether or not the mother was anxious herself. As noted, this finding is consistent with the majority of previous studies which have failed to find a relationship between maternal anxiety and criticism, but is inconsistent with the report by Whaley et al. (1999) which concluded that anxious mothers were more critical than nonanxious mothers. However, the limitation of the latter study which has already been described (i.e., the possible inflation of anxious mothers’ involvement scores due to the absence of an anxious child/nonanxious mother dyad) applies to the dimension of maternal criticism as well. Accordingly, it appears that there is little support in the literature to suggest that anxious mothers are more critical than nonanxious mothers.

The inconsistent results obtained on the maternal negativity/criticism measure on the two tasks are consistent with the literature which has indicated that maternal rejection showed weaker associations with child anxiety than parental control (McLeod et al., 2007; Rapee, 1997). Also, a recent meta-analysis showed that specific subdimensions within parental rejection differed in their association with child anxiety
Mothers and children with anxiety (McLeod et al., 2007), indicating that negativity and criticism may not represent the same parenting dimension.

The results of this study are also consistent with reciprocal models of anxiety which emphasize the role of parenting in the aetiology of maladaptive anxiety in children (e.g., Chorpita & Barlow, 1998; Ginsburg & Schlossberg, 2002; Hudson & Rapee, 2004). The findings support the contention that parenting characterized by what Parker (1983) labelled “affectionless control” (i.e., high levels of rejection and control) is associated with childhood anxiety, as indicated by the increased levels of maternal overinvolvement and criticism in dyads with an anxious child. However, the current study did not show that maternal anxiety was associated with increased overinvolvement or criticism which is inconsistent with theorists who have suggested that presence of parental anxiety is likely to augment these maladaptive parenting practices (S. M. Bogels & Brechman-Toussaint, 2006; Cobham, 1998; Ginsburg & Schlossberg, 2002; Hudson & Rapee, 2004; Rapee, 2001). Thus, based on existing conceptualizations of anxiety development and maintenance, the absence of a relationship between maternal anxiety and maternal overinvolvement or criticism was surprising.

One explanation of these finding is that maternal anxiety is not important with regard to the constructs measured (i.e., overinvolvement and criticism). Rather, there may be alternative parenting behaviours which are related to maternal anxiety, such as modelling of fearful responses, situational avoidance, distorted thinking, or subjective distress (Cobham, 1998; Ginsburg et al., 1995). A second interpretation of the findings is that parenting practices are influenced by the behaviour of an anxious child (Hudson, Doyle, & Gar, 2007), and are not related to the manifestation of a parent’s own anxiety.
In line with this suggestion, Murray and colleagues (2007) recently noted that studies of anxious parents and their children have generally provided limited support for the contention that parental anxiety is associated with increased control or rejection. Furthermore, when studies have reported such an association, it has generally been in the context of difficult child characteristics, suggesting that child behaviour may elicit certain maladaptive parenting styles.

Limitations of the current study should be considered. This study used only the parent version of the ADIS to assess non-clinic referred children, rather than a synthesis of parent and child report as prescribed by Silverman and Albano (1996). Thus it is possible, although unlikely, that some children may have met criteria for an anxiety disorder based on child reported symptoms in the ADIS. Having said this, the allocation to group was corroborated by the self report measures of child anxiety on the SCAS. An additional limitation is that the majority of the anxious children were clinically-referred, whereas none of the anxious mothers were clinically-referred. This could suggest that the strong effects found for child anxiety were the result of more severe levels of clinically significant impairment in the anxious children compared to the anxious mothers. However, the DASS21 anxiety scores reported by anxious mothers were similar to those reported in clinical samples of anxious adults (Brown, Chorpita, Korotitsch, & Barlow, 1997), and therefore it appears that there was a balanced comparison of the impact of child versus mother anxiety on maternal behaviour.

Although this study included a relatively large sample size compared to others of its kind, future studies should include enough participants within each age group to ensure sufficient power to compare maternal behaviours across narrow bands of developmental stages to test subtle age differences. Additionally, the majority of
participants in this study were Caucasian and middle-class, and the extent to which these findings generalize to other populations is unknown and should be examined. Given that mothers generally serve as the primary caregiver, frequently present for assessment and treatment for their child, and are more available to participate in research, this study included only mothers rather than fathers. However, the role of paternal anxiety and the father-child interaction should also be addressed in future, as this relationship has shown to be important in a number of previous studies (e.g., Greco & Morris, 2002). Finally, the current study was cross-sectional and thus cannot determine the direction of effects. Research using longitudinal and experimental designs will help to elucidate the multi-faceted reciprocal influences of mother and child anxiety on the parent–child interaction.

In summary, the current study demonstrated that maternal overinvolvement was associated with child anxiety on the speech task and the FMSS. Maternal negativity/criticism was found to be related to child anxiety on the FMSS, but not on the speech task. No relationship was shown between maternal anxiety and an increase in these maladaptive parenting styles. These results are useful in informing theoretical models of anxiety development and in guiding future research with regard to the potential parent variables associated with child anxiety. Given the bi-directional influences involved in the parent-child relationship, studies which investigate the association between parental anxiety and parenting behaviours other than involvement and criticism (e.g., modelling of fearful responses, encouragement of avoidant responding) will help to further inform theoretical models with regard to alternative parenting variables that may be associated with child anxiety. Parent–child interaction styles are only one part of a complex array of factors (genetic transmission of anxiety,
life events, attachment history, peer rejection) which contribute to anxiety in children (Ginsburg & Schlossberg, 2002), and understanding the extent to which other factors are related to the origins of anxiety would also be of value (McLeod et al., 2007).

Acknowledgements

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References


Mothers and children with anxiety


Table 1

*Distribution of Primary Diagnoses in Percent (Numbers Appear in Parentheses) for Speech Task (Sample 1) and FMSS (Sample 2) – Anxious Children and Anxious Mothers*

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Sample 1 (N = 65)</th>
<th></th>
<th>Sample 2 (N = 75)</th>
<th></th>
<th>Sample 1 (N = 70)</th>
<th></th>
<th>Sample 2 (N = 67)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Generalized Anxiety Disorder</td>
<td>40 (26)</td>
<td></td>
<td>39 (27)</td>
<td></td>
<td>36 (24)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Phobia</td>
<td>29 (19)</td>
<td></td>
<td>31 (23)</td>
<td></td>
<td>26 (18)</td>
<td></td>
<td>30 (20)</td>
<td></td>
</tr>
<tr>
<td>Separation Anxiety Disorder</td>
<td>17 (11)</td>
<td></td>
<td>0</td>
<td></td>
<td>14 (10)</td>
<td></td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Specific Phobia</td>
<td>3 (2)</td>
<td>7 (5)</td>
<td>10 (7)</td>
<td></td>
<td>9 (6)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Obsessive Compulsive Disorder</td>
<td>3 (2)</td>
<td></td>
<td>0</td>
<td></td>
<td>4 (3)</td>
<td></td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Anxiety Disorder Not Otherwise Specified</td>
<td>3 (2)</td>
<td>4 (3)</td>
<td>1 (1)</td>
<td></td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attention Deficit Hyperactivity Disorder</td>
<td>3 (2)</td>
<td>0</td>
<td>1 (1)</td>
<td></td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oppositional Defiant Disorder</td>
<td>2 (1)</td>
<td>0</td>
<td>1 (1)</td>
<td></td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Panic Disorder with Agoraphobia</td>
<td>0</td>
<td>5 (4)</td>
<td>1 (1)</td>
<td></td>
<td>5 (3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Selective Mutism</td>
<td>0</td>
<td>0</td>
<td>1 (1)</td>
<td></td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bipolar I Disorder</td>
<td>0</td>
<td>5 (4)</td>
<td>0</td>
<td></td>
<td>6 (4)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Major Depressive Disorder</td>
<td>0</td>
<td>3 (2)</td>
<td>0</td>
<td></td>
<td>2 (1)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agoraphobia without Panic Disorder</td>
<td>0</td>
<td>3 (2)</td>
<td>0</td>
<td></td>
<td>3 (2)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adjustment Disorder with Anxiety</td>
<td>0</td>
<td>3 (2)</td>
<td>0</td>
<td></td>
<td>3 (2)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dysthymic Disorder</td>
<td>0</td>
<td>3 (2)</td>
<td>0</td>
<td></td>
<td>2 (1)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post Traumatic Stress Disorder</td>
<td>0</td>
<td>1 (1)</td>
<td>0</td>
<td></td>
<td>3 (2)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avoidant Personality Disorder</td>
<td>0</td>
<td>1 (1)</td>
<td>0</td>
<td></td>
<td>2 (1)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hypochondriasis</td>
<td>0</td>
<td>1 (1)</td>
<td>0</td>
<td></td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cyclothymic Disorder</td>
<td>0</td>
<td>1 (1)</td>
<td>0</td>
<td></td>
<td>1 (1)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 2

Demographic Variables Across Groups in the Speech Task (Sample 1) and the FMSS (Sample 2). Standard Deviations Appear in Parentheses

<table>
<thead>
<tr>
<th>Sample</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NAxC/</td>
<td>AxC/</td>
</tr>
<tr>
<td></td>
<td>NAxM</td>
<td>NAXM</td>
</tr>
<tr>
<td>Child’s age (M)</td>
<td>8.3</td>
<td>9.1</td>
</tr>
<tr>
<td></td>
<td>(3.5)</td>
<td>(3.1)</td>
</tr>
</tbody>
</table>

Family Income

<table>
<thead>
<tr>
<th></th>
<th>$1–20,000</th>
<th>$20,001–40,000</th>
<th>$40,001–80,000</th>
<th>$80,000 or more</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3%</td>
<td>12%</td>
<td>36%</td>
<td>49%</td>
</tr>
<tr>
<td>Family Income</td>
<td>0%</td>
<td>4%</td>
<td>23%</td>
<td>73%</td>
</tr>
<tr>
<td></td>
<td>5%</td>
<td>19%</td>
<td>27%</td>
<td>49%</td>
</tr>
<tr>
<td></td>
<td>8%</td>
<td>22%</td>
<td>36%</td>
<td>34%</td>
</tr>
<tr>
<td></td>
<td>6%</td>
<td>6%</td>
<td>41%</td>
<td>47%</td>
</tr>
<tr>
<td></td>
<td>8%</td>
<td>12%</td>
<td>18%</td>
<td>64%</td>
</tr>
<tr>
<td></td>
<td>6%</td>
<td>14%</td>
<td>28%</td>
<td>50%</td>
</tr>
<tr>
<td></td>
<td>25%</td>
<td>41%</td>
<td>41%</td>
<td>28%</td>
</tr>
</tbody>
</table>

Family Composition

<table>
<thead>
<tr>
<th></th>
<th>Married</th>
<th>Single/Divorced</th>
<th>Other</th>
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<tbody>
<tr>
<td></td>
<td>85%</td>
<td>0%</td>
<td>15%</td>
</tr>
<tr>
<td>Family Composition</td>
<td>89%</td>
<td>0%</td>
<td>11%</td>
</tr>
<tr>
<td></td>
<td>78%</td>
<td>8%</td>
<td>14%</td>
</tr>
<tr>
<td></td>
<td>61%</td>
<td>18%</td>
<td>21%</td>
</tr>
<tr>
<td></td>
<td>78%</td>
<td>10%</td>
<td>12%</td>
</tr>
<tr>
<td></td>
<td>79%</td>
<td>9%</td>
<td>12%</td>
</tr>
<tr>
<td></td>
<td>89%</td>
<td>6%</td>
<td>5%</td>
</tr>
<tr>
<td></td>
<td>61%</td>
<td>21%</td>
<td>18%</td>
</tr>
</tbody>
</table>

Note: Family income is reported in Australian dollars. AxC = anxious child, AxF = anxious mother, NAXC = nonanxious child, NAXM = nonanxious mother.
Table 3

Means and Standard Deviations for Questionnaire Measures Across Groups in the Speech Task (Sample 1) and the FMSS (Sample 2)

<table>
<thead>
<tr>
<th>Sample</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NAxC/</td>
<td>AxC/</td>
</tr>
<tr>
<td></td>
<td>NAxM</td>
<td>AxM</td>
</tr>
</tbody>
</table>

| Questionnaire | Child | | | | | | | |
| SCAS | | M | 21.4<sup>a</sup> | 36.4<sup>b</sup> | 37.0<sup>b</sup> | 20.2<sup>a</sup> | 14.7<sup>a</sup> | 34.3<sup>b</sup> | 36.0<sup>b</sup> | 21.5<sup>a</sup> |
| | | SD | 12.0 | 18.2 | 16.5 | 14.6 | 9.7 | 15.0 | 14.8 | 15.1 |

| Mother | SCAS | | | | | | | |
| | M | 14.2<sup>a</sup> | 38.4<sup>b</sup> | 36.0<sup>b</sup> | 11.0<sup>a</sup> | 8.9<sup>a</sup> | 34.2<sup>b</sup> | 36.6<sup>b</sup> | 10.6<sup>a</sup> |
| | SD | 7.9 | 18.6 | 14.9 | 7.1 | 6.1 | 18.1 | 15.0 | 6.9 |

| DASS21 | Depression | | | | | | | |
| | M | 4.9<sup>a</sup> | 4.2<sup>a</sup> | 10.2<sup>b</sup> | 16.9<sup>c</sup> | 3.5<sup>a</sup> | 4.9<sup>a</sup> | 11.1<sup>b</sup> | 17.4<sup>b</sup> |
| | SD | 5.7 | 5.5 | 8.3 | 11.2 | 8.2 | 4.2 | 8.4 | 11.5 |

| Anxiety | | M | 3.3<sup>a</sup> | 4.5<sup>a</sup> | 10.7<sup>b</sup> | 16.9<sup>c</sup> | 2.4<sup>a</sup> | 4.7<sup>b</sup> | 10.2<sup>c</sup> | 17.0<sup>d</sup> |
| | | SD | 3.8 | 4.4 | 8.9 | 11.1 | 2.8 | 4.4 | 8.4 | 11.5 |

| Stress | | M | 10.1<sup>a</sup> | 11.2<sup>a</sup> | 18.5<sup>b</sup> | 23.7<sup>c</sup> | 8.2<sup>a</sup> | 12.0<sup>b</sup> | 18.7<sup>c</sup> | 24.7<sup>d</sup> |
| | | SD | 6.6 | 8.3 | 8.5 | 8.8 | 5.0 | 6.0 | 8.6 | 9.0 |

Note: Questionnaire measures are reported for children aged 6 years and over. SCAS = Spence Children’s Anxiety Scale; DASS21 = Depression Anxiety Stress Scales. Mean sharing superscripts are not significantly different at the critical alpha (p < .01). AxC = anxious child, AxM = anxious mother, NAxC = nonanxious child, NAxM = nonanxious mother.
Table 4

*Mean Involvement and Negativity Scores on the Speech Task*\(^2\) *for the Entire Sample and the Separate Child Age Groups*

<table>
<thead>
<tr>
<th>Factor</th>
<th>NonAnxC/NonAnxM</th>
<th>AnxC/AnxM</th>
<th>AnxC/NonAnxM</th>
<th>NonAnxC/AnxM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Involvement</td>
<td>3.37 1.45</td>
<td>3.93 1.50</td>
<td>4.30 1.44</td>
<td>3.50 1.68</td>
</tr>
<tr>
<td>Negativity</td>
<td>2.39 1.10</td>
<td>2.80 0.89</td>
<td>2.93 1.46</td>
<td>2.90 1.07</td>
</tr>
</tbody>
</table>

Scores for the separate child age groups

<table>
<thead>
<tr>
<th>Involvement</th>
<th>4–11 years</th>
<th>12–16 years</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3.31 1.46</td>
<td>3.65 1.48</td>
</tr>
<tr>
<td></td>
<td>3.77 1.67</td>
<td>4.21 1.18</td>
</tr>
<tr>
<td></td>
<td>4.28 1.47</td>
<td>4.42 1.42</td>
</tr>
<tr>
<td></td>
<td>3.72 1.74</td>
<td>3.09 1.52</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Negativity</th>
<th>4–11 years</th>
<th>12–16 years</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.24 0.99</td>
<td>3.08 1.46</td>
</tr>
<tr>
<td></td>
<td>2.71 0.99</td>
<td>2.94 0.71</td>
</tr>
<tr>
<td></td>
<td>2.78 1.46</td>
<td>3.67 1.39</td>
</tr>
<tr>
<td></td>
<td>2.82 0.93</td>
<td>3.06 1.34</td>
</tr>
</tbody>
</table>

*Note:* AnxC = anxious child, AnxM = anxious mother, NonAnxC = nonanxious child, NonAnxM = nonanxious mother.

\(^2\) In order to ensure that the inclusion of mothers with mood disorders and children with externalizing disorders did not impact on the results, all analyses regarding involvement and negativity were run excluding participants who met criteria for the aforementioned disorders. Results yielded the same findings as with their inclusion, and therefore the figures presented included data from the entire sample.
Table 5

*Frequencies of EOI, EOI subscales, and CRIT from the FMSS*

<table>
<thead>
<tr>
<th></th>
<th>NonAnxC/NonAnxM</th>
<th>AnxC/NonAnxM</th>
<th>AnxC/AnxM</th>
<th>NonAnxC/AnxM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Borderline–High EOI</td>
<td>63.5%</td>
<td>50.0%</td>
<td>58.8%</td>
<td>57.6%</td>
</tr>
<tr>
<td>Emotional Display (% present)</td>
<td>0%</td>
<td>2.8%</td>
<td>5.9%</td>
<td>0%</td>
</tr>
<tr>
<td>Overprotection/Self-Sacrificing/Lack of Objectivity (% borderline or present)</td>
<td>0%</td>
<td>8.3%</td>
<td>17.6%</td>
<td>3.0%</td>
</tr>
<tr>
<td>Low CRIT</td>
<td>82.7%</td>
<td>52.8%</td>
<td>52.9%</td>
<td>66.7%</td>
</tr>
<tr>
<td>Borderline–High CRIT</td>
<td>17.3%</td>
<td>47.2%</td>
<td>47.1%</td>
<td>33.3%</td>
</tr>
</tbody>
</table>

*Note: AnxC = anxious child, AnxM = anxious mother, NonAnxC = nonanxious child, NonAnxM = nonanxious mother.*