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A Retrospective Study of the Link between Maternal Social Anxiety and College-Student Social Anxiety: Mediating the Role of Maternal Cognitions & Behaviors

Kyung Won Kim
Eastern Illinois University
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A Retrospective Study of the Link between Maternal Social Anxiety and College-Student Social Anxiety: Mediating Role of Maternal Cognitions & Behaviors

(TITLE)

BY

Kyung Won Kim

THESIS

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2014

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A Retrospective Study of the Link between Maternal Social Anxiety and College-Student Social Anxiety: Mediating Role of Maternal Cognitions & Behaviors

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Abstract

Parental social anxiety is a well-established risk factor for child social anxiety. In addition to being passed along genetically, parental anxiety seems to be transmitted partially via environmental factors, such as parental cognitions and behaviors that convey negative expectations toward the child. This paper reviews the current literature linking maternal social anxiety, maternal cognitions, and offspring social anxiety. Using a retrospective design, a mediated model, examining the association between maternal social anxiety and later offspring social anxiety, with maternal cognitions and behaviors during childhood as a mediator was tested. Consistent with the hypothesis, maternal fear of negative evaluation served as a mediator between maternal social anxiety and offspring social anxiety. However, contrary to the hypotheses, maternal worry, expectancies in social and general success dimensions, and overprotective behavior did not serve as mediators between maternal social anxiety and offspring social anxiety. This paper adds to the existing literatures that link maternal anxiety and offspring anxiety.
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A Retrospective Study of the Link between Maternal Social Anxiety and College-Student Social Anxiety: Mediating Role of Maternal Parenting Behaviors & Cognitions

Many studies have found a reciprocal relationship between parent and child social anxiety (for a review see Kimbrel, 2008; Rapee & Spence, 2004). However, only a few studies have specifically examined the association between parent and child social anxiety with parental cognitions and behaviors as a mediator (Schreier & Heinrichs, 2010). Thus, this paper reviews the literature on maternal cognitions and behaviors as a potential mediator between mothers’ and young adults’ social anxiety and describe a retrospective study testing this model. Thus, this paper will examine young adult’s childhood recollections of their mother’s social anxiety and relevant cognitions and behaviors. This paper will begin with a consideration of social anxiety in young adults and the possible role that earlier maternal factors (e.g., social anxiety and related cognitions and behaviors) may play.

Anxiety & the Influence of Childhood Experiences

Although the connection between adult anxiety and childhood experiences has not been distinctly supported, evidence suggests that childhood experiences may increase vulnerability to anxiety in adulthood (Andersson & Perris, 2000; Rapee & Barlow, 2001). For example, the relationship between parental overcontrol and a lack of child responsiveness to the social environment may carry over into adulthood (Rubin & Burgess, 2001; Taylor & Alden, 2006). Therefore, gaining insight into the link between parenting and childhood social anxiety may help us better understand social anxiety in adulthood as well.

Childhood negative life events such as parental psychopathology have been shown to be the risk factors of social anxiety disorder (Chartier et al., 2001; Kessler et al., 1997). Rapee and Spence (2004) in their overview of the etiology of social anxiety disorder, suggest that during the
early stage of cognitive and attitudinal development of a child, parenting style may exert a long lasting influence by instilling in the child negative beliefs such as “others are critical” and “I am incompetent.” Retrospective studies of adults with social anxiety disorder have found that childhood negative social experiences such as criticism and humiliation by significant others as well as, adverse social consequences may trigger the development of social anxiety disorder (Hackmann et al., 1998, 2000). Hackmann and colleagues (2000), through retrospective reports of adults, found that persons with social anxiety disorder experience negative spontaneous images and these images were linked to the recollections of negative social events that happened around the onset of the disorder.

Social Anxiety

Social anxiety disorder (formerly known as social phobia) is defined as a “marked and persistent fear in a variety of social situations” (Furmark 2002, p 84; Schneier 2006, p 1030). It has high life-time prevalence rates (12-month) of approximately 7% (5th ed.; DSM-5; American Psychiatric Association, 2013). Interaction anxiety is a component of social anxiety and occurs when an individual interacts socially with others because he/she fears being perceived in a negative way (Mattick & Clarke, 1998). The mean age of the onset of social anxiety disorder is 10 to 13 years; many studies have found that people with social anxiety disorder typically report an age of onset prior to 18 years (Nelson et al., 2000; Otto et al., 2001). Rapee and Spence (2004) also suggest that early to mid-adolescence is likely to be a critical developmental stage where social interactions grow important to an individual. Neufeld and colleagues (1999) found that it is very rare (4-5 per 1000 per year) for social anxiety disorder to begin in adulthood. Epidemiological studies consistently find sex differences, with higher rates of females than males with social anxiety disorder (Essau et al., 1999; Furmark, 2002; Spence, 1998).
Cognitive factors of social anxiety disorder include biases and distortions in interpreting social interactions. Thoughts, attitudes and beliefs are proposed to play a role in the development and maintenance of social phobia (Clark & Wells, 1995; Rapee & Heimberg, 1997). Clark & Wells (1995) in a review of a cognitive model of social phobia, proposed that anticipatory anxiety is the main characteristic of social anxiety disorder. Symptoms of social anxiety disorder include anticipatory anxiety (i.e., physical and emotional symptoms of anxiety that occur before engaging in a social event). Individuals with social anxiety disorder feel anxious as their thoughts become dominated by adverse past memories, and they predict similar poor performance and rejection. As they over-anticipate negative outcomes, it is likely that they cannot notice signs of acceptance by others. Alden and Taylor, (2004) in a review of interpersonal processes in social phobia, suggested that cognitive processes in individual with social anxiety disorder eventually trigger dysfunctional social behavior.

The Relationship between Parent and Offspring Anxiety

Studies have revealed that parent anxiety including parent social anxiety are linked to offspring anxiety including social anxiety (Lieb et al., 2000; Mancini et al., 1996). This paper reviews the literature on both anxiety more generally and social anxiety because social anxiety is the specific kind of anxiety. Although the current study will focus on maternal anxiety, this paper will also discuss studies of parent anxiety because many studies have included both fathers and mothers. Likewise, although this study examines social anxiety in college students and retrospectively examines maternal factors, this paper reviews child studies where relevant. A number of recent studies of childhood anxiety can offer some illumination here.

McClure and colleagues (2001) found that maternal anxiety disorder is a significant predictor of the presence of anxiety disorders in children; whereas paternal anxiety disorder is
not significantly associated with child anxiety disorder. Schreier and Heinrichs (2010) also reported that maternal fear of negative child evaluation mediated the association between mother and child social anxiety; whereas paternal fear of negative child evaluation did not.

The reciprocal relationship between parent and child anxiety has been conceptualized and examined in varying ways across studies. Although some researchers assert that parent anxiety may result from parental exposure to child anxious cognitions and reactions (e.g., parents may become cautious or wary in an attempt to shield their child from anxiety and potential perceived dangers), other researchers theorize that parent anxiety may cause child anxiety. Many studies have found that children of highly anxious parents are at high risk of developing an anxiety disorder (Beidel & Turner, 1997; Turner et al., 1987). Although some studies have found a significant role of genetic factors in transmission of anxiety disorders as a portion of the etiology of anxiety disorders, environmental factors such as parental factors also are known to play a role in the development of anxiety disorders (Andrews et al., 1990; Budinger et al., 2013; Weissman, 1993). Overall, parent anxiety might provide the child with negative expectations which helps to maintain the child’s anxiety (Cobham et al., 1998).

Parent and offspring social anxiety. Parent social anxiety is a well-known risk factor for child social anxiety (Kimbrel, 2008; Rapee & Spence, 2004). The results of Murray and colleagues’ (2008) research on social referencing and Schreier and Heinrichs’ (2010) research on parental fear of negative child evaluation suggest that parent’s emotional responses to their child when facing an anxiety-provoking social situation may be pertinent to the development of child social anxiety. So far, the transmission mechanism between parent and child social anxiety is unknown; it is still unclear whether child social anxiety initially triggers parent social anxiety or parent social anxiety triggers child social anxiety. However, the results of some studies suggest
that parent social anxiety predicts child social anxiety. Lieb and colleagues (2000) conducted a longitudinal study and found that parent social phobia was strongly associated with the development of offspring social phobia. When they compared the rates of social phobia in offspring of parents with and without *DSM-IV* social phobia, offspring of parents with *DSM-IV* social phobia were more likely to develop social phobia. This evidence suggests that parents with social phobia are likely to play an important role in their child’s development of social phobia.

Parent *social* anxiety disorder appears more likely to influence parenting behaviors compared to other types of parent anxiety disorders (Budinger et al., 2013). Bogels and colleagues (2001) found that maternal social anxiety is related to child social anxiety in a non-clinical sample. If parents can transmit social anxiety to their offspring in ways other than simple genetics, then how does this transfer occur? One explanation concerns the possible role of parental cognitions and behaviors.

**Maternal Cognitions and Offspring Anxiety**

Studies have examined whether parental cognitive bias, such as anxious beliefs and expectations, are linked to the development and maintenance of child anxiety problems (Wheatcroft & Creswell, 2007). For the present study, anxious maternal cognitions including maternal expectancies, maternal worry, and maternal fear of negative child evaluation were used, each of which are discussed below.

**Maternal expectancies.** A few studies have examined how parental expectancies of children are related to specific childhood internalizing disorders (Cobham et al., 1998; Kortlander et al., 1997). Cobham and colleagues (1998) found that *anxious parents of anxious children* expect their children to be more anxious and avoidant when problem-solving than do *non-anxious parents of anxious children*. The authors suggested that these pessimistic parental
expectations from anxious parents may be observed by their children, resulting in child anxiety. Thus parental anxiety might play a role in creating pessimistic maternal expectations, eventually maintaining childhood anxiety (Cobham et al., 1998).

Eisen and colleagues (2004) examined parental expectancies across different areas of children’s lives. For this study, they developed the Parental Expectancies Scale (PES) to assess parental expectancies in relation to their offspring (e.g., academic, extracurricular, social, household activities, and general success). They found that parents of anxious youth have lower expectancies for their children than do parents of non-anxious youth. This result suggests that these pessimistic parental expectancies may also reflect their negative cognitive style when it comes to parenting. Both fathers’ and mothers’ data were collected, and although they had different emphases, they all focused on their child’s general or future success.

Other studies also have found that parents of anxious children tend to have low expectations of their children’s behavior in ambiguous, problem-solving situations (Kortlander et al., 1997; Taylor & Rachman, 1994), suggesting that they think that their children do not possess good coping or problem-solving skills. Wheatcroft and Creswell (2007) examined the association between parent and pre-school aged children’s anxiety levels and parents’ expectations about their child’s mood and behavior in ambiguous situations. They found a positive correlation between parent anxiety and parents’ expectations that their child might have anxious mood and behavior. These expectancies could easily influence child behaviors, leading to or exacerbating child anxiety. The authors suggested that parents’ perception of their children’s ability to control anxious behavior is primarily associated with parental anxiety level.

Maternal worry. The nature of worry is that it generally concerns future events, involving an anticipation of potential negative outcomes (Fisak et al., 2012). Maternal worry
about their children, possibly a form of threat interpretation, is another type of anxious parent cognition that may influence child anxiety. Fisak and colleagues (2012) developed The Parent Worry Measure (PWM) which categorizes parent worry about their child across different areas (e.g., physical harm, social adjustment, academic adjustment) although factor analysis demonstrated that it is a single-dimension measure. Compared to parents with low levels of anxiety, parents with high levels of anxiety were more likely to worry about their children’s social competence or social adjustment. Also, in comparison to parents with low levels of anxiety, parents with high levels of anxiety tended to worry on a daily bases, which is more likely to convey frequent messages of worry to their children.

Scores on the PWM also partially mediated the association between parent and child anxiety, suggesting that parent worries that are conveyed to children at least partially influence child anxiety (Fisak et al., 2012). In addition, parent worry about their children, was a more powerful predictor of child anxiety than parent anxiety symptoms. Overall, these studies suggest anxious parental cognitive biases likely play an important role in the transmission of anxiety from parent to child.

**Fear of negative child evaluation.** According to cognitive models and recent research, fear of negative evaluation from others is the key component of social anxiety (Clark & Wells, 1995; Rapee & Heimberg, 1997). Fear of negative evaluation involves feelings of concern about how others evaluate one’s self, distress over these negative evaluations from others, and the expectation of future negative evaluations (Watson & Friend, 1969).

Parents who fear other people’s opinions may inadvertently teach their children to fear what others think about them, and become preoccupied with social concerns (Hudson & Rapee, 2000). Parental fear of negative child evaluation involves parental worries that their child is
will be evaluated negatively by others (Schreier & Heinrichs, 2010). For example, parents may worry that others talk poorly about the child or that others do not like the child. Schreier and Heinrichs (2010) developed a brief measure of parental fear of negative child evaluation (FNCE), and hypothesized that parental fear of negative child evaluation predicts child social anxiety and also mediates the association between maternal and child social anxiety. Their study was the first to demonstrate the possibility of the extension of parents’ fear of negative evaluation into a fear of negative evaluation related to their children. Only maternal fear of negative child evaluation mediated the association between mother and child social anxiety. The authors collected both child and mother reports of maternal fear of negative child evaluation; mother report was found to fully mediate the association between maternal and child social anxiety, whereas child report partially mediated the association between maternal and child social anxiety.

**Maternal Behaviors and Offspring Anxiety**

According to contemporary developmental theories of anxiety, the family environment is an important contributing factor on the development and maintenance of anxiety disorders (Chorpita & Barlow, 1998; Rapee, 2001; Rubin & Mills, 1991). Craske’s (1999) model also proposed that situationally and behaviorally specific parenting behavior are hypothesized to play a role in the development of particular child anxiety disorders. However, more recent studies (e.g., Wood et al., 2003) have demonstrated the multi-finality of parental (lack of) warmth and controlling behaviors; that is, these parenting behaviors are risk factors but for several different kinds of psychopathology.

**Maternal over-involvement and negativity.** Barrett and colleagues (1996) found that after anxious children (ages 7 to 14 years) had a discussion with their parents about how to
handle an ambiguous threat situation, children increasingly selected solutions that were more avoidant in nature. Thus, the parental behaviors during this discussion seem to have influenced children to become more avoidant. Behavioral observation methodology was used in some studies to demonstrate that in comparison with parents of nonanxious children, parents of anxious children demonstrated higher parental controlling behavior in parent-child dyads (Hudson & Rapee, 2001; Siqueland et al., 1996; Whaley et al., 1999). Hudson and Rapee (2001) found that although parental involvement decreased with age, the differences were significant between anxious and nonanxious children across all groups of children. The authors suggested that over-involvement and parental negativity may be more common among parents of anxious children.

Furthermore, several studies have found that adults with anxiety disorders, social anxiety in particular, retrospectively rate their parents’ parenting as rejecting and overprotective (Parker, 1979; Arrindell et al., 1989). The result of Lieb and colleagues’ (2000) study also demonstrated that the presence of parental psychopathology and perceived parenting, specifically parental overprotection and rejection, correlated positively with the development of social anxiety in youth.

Despite these findings, according to behavior genetic research, the role of family factors in the transmission of many anxiety disorders is limited (Kendler et al., 1995). Nonetheless, there is growing attention among researchers that parenting behavior is a potential anxiety disorder-transmission mechanism (Gerlsma et al., 1990; Rapee, 1997; Thirlwall & Creswell, 2010). Through their studies, both Rapee (1997) and Gerlsma and colleagues (1990) indicated that compared to nonanxious controls, it is more likely that adults with anxiety disorders retrospectively recall their parents’ parenting behaviors as overprotective with a lack of warmth.
Thirlwall and Creswell (2010) also found that when parents presented more controlling behaviors while preparing the speech task, children felt significantly more anxious about the task. Specifically, some researches hypothesize that anxious parents and parents of anxious children may overestimate potential harm, danger, and threats to their children, and this kind of parental interpretation bias may be conveyed to child through behaviors including overprotection, modeling of anxiety, and reinforcement of anxiety (Mineka and Zinbarg, 2006; Creswell & O’Connor, 2006; Lester et al., 2009). Therefore, anxious mothers may present with certain kinds of behaviors based on their own interpretation bias.

Whaley et al (1999) suggested that the behaviors of anxious mothers is a possible mediator of the association between maternal and child anxiety, as they found that attributes of mother-child interaction were the most notable predictors of child anxiety. Their study also found that compared to non-anxious parents, anxious parents tend to exhibit behaviors higher in control and criticism, but lower in warmth and granting of autonomy to their children. In contrast, McClure and colleagues (2001) failed to support the possible role of perceived parenting as a mediator between mother and child anxiety disorders. They found that maternal anxiety disorder is not necessarily linked to maternal controlling behaviors. However, this study did not include observational data regarding parent behavior, which may have made the associations between child anxiety disorders and perceived parental control unclear.

**Maternal overprotection.** Overprotection has been studied often with regard to child anxiety in general, but research interest is growing in how parental overprotection may contribute to child social anxiety (Burgess et al., 2005; Hudson & Rapee, 2000; Taylor & Alden, 2006). Hudson and Rapee (2000) proposed that through parental overprotection, parents may convey messages to the children that the world is a harmful place and they are incapable of
defending themselves. The authors suggest that children may therefore start perceiving themselves as incapable of coping, which is rudimentary to the experience of anxiety (Hudson & Rapee, 2000).

Many studies have found parental overcontrol/overprotection as a strong predictor of social anxiety in youth (Bogels et al., 2001; Brook & Schmidt, 2008; Festa & Ginsburg, 2011; Taylor & Alden, 2006). Taylor and Alden (2006) suggested that parental overprotection possibly contributes to the persistence of childhood behavior patterns into adulthood, although longitudinal studies have yet to examine this conjecture. Parker (1983) hypothesized that there is a relationship between parental overprotection and the development of child anxiety.

Overprotection is an excessive involvement of parents to control the child’s environment in minimizing negative experiences for the child, although some of these situations do not represent actual threats (Parker, 1983). For children with anxiety, the parent-child relationship is characterized by an overprotective or overinvolved style of parenting (Rapee, 2001). Rapee’s (2001) model of anxiety development suggests that a reciprocal relationship between parent behavior and child anxiety is responsible in part for developing and maintaining anxiety disorders. According to the results of their study, overinvolved parenting reinforces the child’s vulnerability toward anxiety by elevating the child’s perception of threat, decreasing the child’s perceived control over threat, and eventually teaching the child to avoid threat.

Retrospective studies on adult’s perceptions of their childhood parents’ rearing behavior using EMBU (Egna Minnen Betraffande Uppfostran (Swedish); My memories of upbringing; Perris et al., 1980) measure have been conducted (e.g., Andersson & Perris, 2000; Winefield et al., 1990). Both Muris and colleagues (2003) and Young and colleagues (2013) using the modified version of EMBU (EMBU-C), found that parent rearing behaviors are related
significantly to anxiety symptoms in their children. Markus and colleagues (2003) using EMBU-C, also found that parent’s past rejecting and protective rearing was positively associated with trait anxiety in children.

**Current Study and Hypotheses**

The primary goal of this retrospective study was to examine whether college students’ current levels of social anxiety symptoms were related to retrospective reports (i.e., having them recall back to when they were 12 years old) of their mothers’ levels of social anxiety as well as related maternal cognitions and behaviors. Specifically, maternal cognitions included worry about social competence and social adjustment, expectancies of child social and general success, and fear of negative child evaluation. Maternal behaviors included overprotective parenting (e.g., not allowing their child to do things other children are allowed to do). The literature examining general parent anxiety in relation to general child anxiety is robust; whereas the literature supporting positive correlations between parent social anxiety and child social anxiety is less prevalent. Also, the literature has not yet fully examined maternal cognition and behaviors as a mediator between mother and offspring social anxiety.

Although there is not much research in this area, Schreier and Heinrichs (2010) found that the relationship between maternal social anxiety and offspring social anxiety was mediated by parental fear of negative child evaluations. Likewise, Taylor and Alden (2006) documented that maternal overprotective behaviors are linked to offspring social anxiety. This study will add to the existing literature, because it specifically examines parental worry and expectancies in their relation to mother and offspring social anxiety. Previous research has examined parental worry and expectancies in their relation to mother and offspring anxiety in general. In this study, college students reported retrospectively (age 12 years) about childhood maternal cognitions,
behaviors, and social anxiety as well as on their current levels of social anxiety.

The link between childhood maternal social anxiety and current student social anxiety as mediated by both maternal cognitions and behaviors was examined. First, maternal social anxiety was predicted to be positively related to offspring social anxiety as mediated by maternal cognitions (maternal worry, fear of negative child evaluation, and maternal expectancies in social and general success dimensions). Second, maternal social anxiety and offspring social anxiety were predicted to be positively related as mediated by maternal behavior (overprotection).

Method

Participants

Participants were Eastern Illinois University undergraduate students ($N = 133$) who were enrolled in an introductory psychology course. Participants received course credit for their participation. Data from 36 students were invalid and removed from our data set for one of the following reasons: extremely short completion time (e.g., 7 minutes or less; $N = 15$); age over 22 years ($N = 1$); too much missing data ($N = 18$); or did not have a relationship with mother during childhood ($N = 2$). The final sample consisted of 97 undergraduate students (range 18-22 years of age; see Table 1). An a priori power analysis indicated that approximately 88 participants would be needed to find a medium ($r^2 = .15$) effect. Therefore, the number of participants was enough to find a medium effect of this study. Sixty-one (62.9%) of the students were female. In terms of race, 54.6% were Caucasian ($N = 53$); African American ($N = 27$) comprised 27.8%; Latino/Hispanic American ($N = 12$) comprised 12.4%; Asian American ($N = 2$) comprised 2.1%; Native American ($N = 1$) comprised 1%; bi-racial/multi-racial students ($N = 1$) comprised 1%; and other ($N = 1$) comprised 1% of the student participants.
Measures

Maternal cognitions. Three instruments were used to retrospectively measure maternal cognitions. The Parental Expectancies Scale is a 20-item parent-report instrument (PES; Eisen et al., 2004) designed to assess five dimensions of parental expectancies in academic, extracurricular, household, social, and general success areas; for this study, it was adapted so that college-aged students could retrospectively report (i.e., at age 12 years) about their mothers’ expectancies. For example, item 1 changed from “I expect academic success would be an important goal for my child” to “My mother expected academic success would be an important goal for me.” There are five subscales: academic achievement (“My mother expected that academic success would be an important goal for me.”), extra-curricular activities (“My mother expected that I would distinguish myself with top performances in extracurricular activities.”), household responsibilities (“My mother expected me to become more responsible and self-sufficient in home-related activities.”), peer activities (“My mother expected that popularity and an active social life would be important goals for me.”), and general success (“My mother expected that experiences of success would be the best reinforcers for my self-confidence.”). Items are scored as 0 to 5 on a Likert-type scale, describing how characteristic a statement is of the parents. The original PES has overall good internal consistency; Cronbach’s alpha for mother’s data was .86 and .87 for father’s data (Eisen et al., 2004). However, internal consistency was less favorable among the five PES subscales; for the overall maternal data, Cronbach’s alpha ranged from .52 to .69, and for the overall paternal data, Cronbach’s alpha ranged from .56 to .80. Further, test-retest reliability was strong; $r = .92$ for maternal data and $r = .91$ for paternal data. Concurrent validity of the PES was examined by comparing PES scores to the Symptom Checklist (SC) and the subscales of CBCL (Child Behavior Checklist; Eisen et
Maternal PES overall scores correlated -0.32, p < .001 with Symptom Checklist (SC). PES general success subscale predicted scores on the academic competency subscale of the CBCL (F = 3.12, df = 4, 38, p < .05, r = .50). In addition, PES social subscale predicted scores on the social competency subscale of the CBCL (F = 3.14, df = 4, 30, p < .05, r = .54).

The Parent Worry Measure (PWM; Fisak et al., 2012) is a 34-item measure designed to assess the content of parent worries in relation to their children and the frequency in which parents experience these worries; for this study, it was adapted so that college-aged students could retrospectively report (i.e., at age 12 years) about their mothers’ worries. For example, item 1 changed from “I worry that my child won’t be able to handle things in the future when he/she is on his/her own” to “My mother worried that I wouldn’t be able to handle things on my own in the future.” There are three dimensions of potential worries: physical harm (“My mother worried that I might get hurt in a traffic accident.”), social adjustment (“My mother worried that I would be disliked or rejected by others.”), and academic adjustment (“My mother worried about my ability to learn and succeed in school.”). Items are responded on a Likert scale ranging from 0 to 4, describing the frequency to which parents experience specific worries about their children. The PWM demonstrates strong reliability with a Cronbach’s alpha of .95 (Fisak et al., 2012). The Generalized Anxiety and Separation Anxiety subscales of the SCAS (Spence Children’s Anxiety Scale) shared unique variance with the PWM scale (Fisak et al., 2012).

The Parental Fear of Negative Child Evaluation (FNCE; Schreier & Heinrichs, 2010) is a 4-item measure designed to assess general parental worries and fear of negative evaluation of their child; for this study, it was adapted so that college-aged students could retrospectively report (i.e., at age 12 years) about their mothers’ fear of negative child evaluations. For example, item 3 changed from “My mother/my father is afraid that others think poorly of me” to “My
mother was afraid that others would think poorly of me." Items are scored on a four-point Likert scale from 0 ("never") to 3 ("most of the time"). High scores on this measure indicate more intensive worry and fear regarding negative evaluation of their child. Internal consistency of this instrument is strong, with Cronbach’s alpha levels ranging from .87 to .90 for different reporters (Schreier & Heinrichs, 2010). Further validity data are not available.

**Maternal behaviors.** The 27-item Short Egna Minnen Betraffande Uppfostran is a retrospective measure of perceived parental rearing behavior during childhood (the 27 item-sEMBU; Winefield et al., 1989). For this study, this measure was adapted to elicit reports of mothers’ behaviors when college-aged students were 12 years old. For example, item 20 changed from “Did you wish your parents would worry less about what you were doing?” to “Did you wish your mother would worry less about what you were doing?” There are three subscales: support (“If things went badly for you, did you then feel that your mother tried to comfort and encourage you?”), rejection (“Did it happen that your mother was sour and angry with you without letting you know the reason?”), and overprotection (“Did you feel that your mother trusted you so that you were allowed to do things on your own?”). Each item is rated on a four-point Likert scale, ranging from 1 (“never”) to 4 (“always”), depending on how often an item relates to the recalled mothers’ behaviors toward the students. This instrument is internally reliable (alpha coefficient = .70) and has satisfactory test-retest reliability across a 4 year time-span (ranging between $r = .52$ to $r = .78$ across reporters and subscales; Winefield et al., 1990). For this study, only scores on the overprotection subscale were used as it is the parenting behavior most likely to mediate the relationship between parent and child social anxiety. Validity was demonstrated by correlating with the General Health Questionnaire ($r = .32, p < .001$; Winefield et al., 1989).
**Social anxiety symptoms.** The Social Interaction Anxiety Scale (SIAS; Mattick & Clarke, 1998) is a 20-item self-report measure that assesses social interaction anxiety, which is conceptualized as distress occurring when having conversations with other people; for this study, it was adapted so that college-aged students could also retrospectively report about their mothers’ level of social interaction anxiety. This measure was completed by college aged students and used to assess both mother’s prior social interaction anxiety and college student’s current social interaction anxiety. For example, for examining mother’s social interaction anxiety, item 12 changed from “I worry about expressing myself in case I appear awkward” to “My mother worried about expressing herself in case she appeared awkward.” Items are rated on a five-point Likert scale from 0 to 4, describing how characteristic a statement is of an individual. Higher scores on this measure indicate higher levels of social interaction anxiety. The SIAS demonstrates high internal consistency, with Cronbach’s alpha levels ranging from .85 to .94 (Heimberg et al., 1992; Mattick & Clarke, 1998; Osman et al., 1998) and short-term test-retest reliability, with Pearson’s r values ranging from .66 to .93 (Heimberg et al., 1992; Mattick & Clarke, 1998). The SIAS has been correlated with numerous anxiety scales, including the Social Avoidance and Distress Scale ($r = .74, p < .001$), Fear Negative Evaluation Scale ($r = .66, p < .001$), the state and trait forms of the State-Trait Anxiety Inventory ($r = .45, p < .01; r = .58, p < .001$), and the social phobia subscale of the Fear Questionnaire (Mattick & Clarke, 1998).

**Current relationship with mother.** Participants also completed the revised version of the Inventory of Parent and Peer Attachment (IPPA; Armsden & Greenberg, 2009) to report on their perceptions of their current relationship with their mothers. The IPPA is a 25-item student-report instrument designed to assess three dimensions of parent attachment: parent trust (10 items; e.g., “My mother trusts my judgment.”), parent communication (9 items; e.g., “My mother
helps me to understand myself better.”), and parent alienation (6 items; e.g., “I feel angry with my mother.”). In this study, only the mother version was used. Items are scored as 1 to 5 on a Likert-type scale, describing how characteristic a statement is of the mothers. The revised version of IPPA’s overall internal consistency is good, with Cronbach’s alpha of .87. Parental attachment scores of IPPA scale are related to Family and Social Self scores from the Tennessee Self Concept Scale (r = .77, p < .001; r = .46, p < .01; Armsden & Greenberg, 1987). This measure was used to detect potential biases that can exist in retrospective reports. The revised version of IPPA (Armsden & Greenberg, 2009) is an unpublished measure, but it is recommended for use by the authors who published the original version of IPPA in 1987 (Armsden & Greenberg, 1987).

**Demographics.** A demographics form also was included (see Appendix). Questions assessed age, ethnicity, number of siblings, and relationship with mother figure when the participant was 12 years old (students were asked to write down similar mother figure, if they had a relationship with similar mother figure such as step-mother or grandmother).

**Procedure**

Data collection was conducted through an online data collection tool called Qualtrics. The participants could either access the surveys through SONA research pool or directly to Qualtrics by the given link. After participating in this study, the participants received course credit from their introductory psychology course. Measures were counter-balanced to control for possible order effects.

**Results**

Descriptive statistics, including means, standard deviations, and internal consistency values (α), were calculated. Correlations were computed to observe links between main study
variables, and standard/simultaneous multiple regression equations tested main study hypotheses concerning mediated models.

**Descriptive Statistics**

Skew and kurtosis values for all main study variables were within the normal range, except one scale: SIASM. For this scale, kurtosis value was acceptable, but skew was slightly above the normal range (1.07).

Cronbach's alpha was calculated for each scale. All alpha values were acceptable with two exceptions: The Social subscale of the PES and the General Success subscale of the PES. For these two subscales, Cronbach’s alpha values were low but satisfactory: $\alpha = .53$ and $\alpha = .62$ respectively (see Table 2). These values are similar to results found in the previous article using this scale: $\alpha = .54$ and $\alpha = .52$ respectively (Eisen et al., 2004). However, Cronbach’s alpha for the overall PES scale ($\alpha = .87$) was excellent. All other scales were also similar to the values found in existing literatures.

SIAS scores for both the mother (student retrospective report) and student also were examined. Peters (2000) suggested that a cut-off score of 36 on the SIAS predicts social phobia. Of the students' self-report measures, 27.8% of the students ($N = 27$ of 97 students’ self-reported scores) scored above the cut-off score of 36. On the students’ retrospective report of their mothers’ social anxiety, 15.6% ($N = 15$) scored above the cut-off score of 36. Thus, this sample contains a number of participants and their mothers who would likely be diagnosed with social anxiety disorder.

Then, zero-order correlations among the main study variables were conducted (see Table 3). The student-parent current relationship was assessed using the IPPA; this scale was included to help assess potential biases in retrospective reporting (e.g., students with poor current relations
with their parents may be biased in reporting past behaviors, with a tendency to be overly negative about their mothers' behaviors).

Participants' reports of parent alienation were related positively to maternal social anxiety \((r = .26, p = .01)\) and participant social anxiety \((r = .30, p = .002)\) as well as maternal fear of negative child evaluation \((r = .19, p = .03)\), maternal worry \((r = .25, p = .007)\), and overprotective parenting behavior \((r = .21, p = .02)\). However, the current level of maternal alienation was not correlated with social subscale of parental expectancies \((r = .01, p = .48)\) and the general success subscale of parental expectancies \((r = -.06, p = .27)\).

The current level of mother-student communication was correlated negatively with retrospective reports of maternal social anxiety \((r = -.34, p < .001)\), maternal fear of negative child evaluation \((r = -.22, p = .02)\), overprotective parenting behavior \((r = -.17, p < .05)\), and the general success subscale of parental expectancies \((r = .17, p < .05)\). However, the current level of communication with mother was not correlated with maternal worry \((r = -.17, p = .05)\) and the social subscale of parental expectancies \((r = .06, p = .27)\). Although it was not statistically significant \((r = -.17, p = .05)\), maternal worry was only slightly above the significance level.

Trust in mother was correlated negatively with maternal fear of negative child evaluation \((r = -.28, p = .003)\), maternal worry \((r = -.32, p = .001)\), overprotective parenting behavior \((r = -.33, p = .001)\), childhood maternal social anxiety \((r = -.43, p < .001)\) and current student social anxiety \((r = -.26, p = .01)\). The current level of trust in mother was correlated positively with the general success subscale of parental expectancies \((r = .19, p = .03)\). However, the current level of trust in mother was not correlated with the social subscale of parental expectancies \((r = .03, p = .40)\).

Thus, retrospective reports were consistent with reports of the current relationship (i.e.,
alienation, trust, and communication). These findings could reflect potential bias (i.e., if the current relationship is poor, then students may reflect back and report more negatively about childhood issues), but it is more likely to indicate the continuation of relationship issues from childhood to young adulthood.

Next, zero-order correlations were used to examine the legs of the theoretical model (see Figure 1). First, childhood maternal social anxiety was correlated positively with the current level of student social anxiety \( (r = .36, p < .001) \). Second, maternal social anxiety was correlated positively with maternal worry \( (r = .48, p < .001) \), maternal fear of negative child evaluation \( (r = .41, p < .001) \), and overprotective parenting behavior \( (r = .23, p = .01) \). However, childhood maternal social anxiety was not correlated with the social subscale of parental expectancies \( (r = .12, p = .12) \) and the general success subscale of parental expectancies \( (r = -.14, p = .09) \).

Third, student social anxiety was correlated positively with maternal worry \( (r = .30, p = .001) \), maternal fear of negative child evaluation \( (r = .39, p < .001) \), the social subscale of parental expectancies \( (r = .36, p < .001) \), the general success subscale of parental expectancies \( (r = .32, p = .001) \). However, current student social anxiety was not correlated with overprotective parenting behavior \( (r = .03, p = .39) \). These zero-order correlations were conducted to help guide the statistical testing of the mediation models, which were proposed based on prior research and theory.

**Mediated regression model.** Mediated regression was used to examine the main study hypothesis: the link between maternal social anxiety and offspring social anxiety will be mediated by both maternal cognitions and behaviors. The procedure outlined by Baron and Kenny (1986) was used, which requires establishing a relationship between (1) the predictor (childhood maternal social anxiety) and the outcome (current student social anxiety), (2) the
predictor (childhood maternal social anxiety) and mediator variable (childhood maternal cognitions and behaviors), and (3) the mediator variable (childhood maternal cognitions and behaviors) and outcome (current student social anxiety). Maternal cognitions included maternal worry, fear of negative child evaluation, and expectancies in social and general success dimensions. Maternal behavior included maternal overprotective parenting behavior. To establish mediation, the beta for the relationship between the predictor (childhood maternal social anxiety) and the outcome (current student social anxiety) must decrease when controlling for the mediator.

For Step 1, the level of maternal social anxiety was associated positively with the level of student social anxiety ($\beta = .36, p < .001$). For Step 2, the level of childhood maternal social anxiety was linked positively with the level of childhood maternal fear of negative child evaluation ($\beta = .41, p < .001$), maternal worry ($\beta = .48, p < .001$), and maternal overprotective parenting behavior ($\beta = .23, p = .03$). Only seven scales out of twelve scales (including subscales) had significant results; three of these seven scales (FNCE, PWM, and sEMBU overprotective subscale) were the main variables examined for the study. For step 3, only the relationship between the level of childhood maternal fear of negative child evaluation and the current student social anxiety was statistically significant while controlling for the childhood maternal social anxiety level, $\beta = .32, p = .002$ (see Figure 2). As $\beta_1$ was not close to zero ($\beta_1 = .23$), maternal fear of negative child evaluation partially mediated the positive relationship between childhood maternal social anxiety and current student social anxiety (Kenny, 2014). The amount of mediation was $\beta_{\text{Indirect Effect}} = .13$. A Sobel test was used, and the mediation effect was significant ($z = 2.55, p = .005$). Unlike our expectation, maternal worry did not predict current student social anxiety while controlling for childhood maternal social anxiety ($\beta = .20, p = .07$) and maternal
overprotective parenting behavior did not predict current student social anxiety while controlling for childhood maternal social anxiety ($\beta = -.03, p = .78$).

**Discussion**

The current study examined the potential link between childhood maternal social anxiety and current student social anxiety with childhood maternal cognitions and behavior as mediators. Some interesting findings emerged, both expected and unexpected, beginning with the association between maternal and student social anxiety.

**Maternal Social Anxiety and Student Social Anxiety**

Maternal social anxiety is a well-known risk factor for child social anxiety (Kimbrel, 2008; Rapee & Spence, 2004). To test this relationship, a retrospective study was conducted in which college-aged participants reported about their childhood at age 12 years, including their mothers’ social anxiety and related maternal cognitions (e.g., maternal fear of negative evaluation) and behaviors (overprotectiveness).

As expected, student-reported past maternal social anxiety was associated positively with the current level of student social anxiety. This finding is consistent with previous research. Lieb and colleagues, 2000 found that parent social phobia was strongly associated with the development of offspring social phobia. That this relationship exists even retrospectively documents the strength of this link. Of course, college students could also be susceptible to potential bias; for example, perhaps persons who develop social anxiety hold certain biases that may affect their ability to report accurately about past issues, particularly issues related to social anxiety. Thus, participants were also asked to report on their current relationship with their mothers.
Maternal Social Anxiety and Maternal Cognitions

Prior research has suggested that parental emotional responses when confronted with an anxiety-provoking social situation may play an important role in the etiology of child social anxiety (Schreier & Heinrichs, 2010). Therefore, college students reported on their mothers’ anxious cognitions when the student was 12 years old. Mothers’ social anxiety was linked positively to several specific types of anxious cognitions: maternal fear of negative child evaluation, maternal worry, and maternal expectancies. The mother’s sensitivity about being evaluated by others (i.e., her own social anxiety) seems to be translate into their parenting practices. In other words, mothers appear to not only be concerned that people will have negative evaluations of themselves, but people will also have negative evaluations about their child, which could also reflect poorly on them. This result supports Schreier and Heinrich’s (2010) finding that maternal social anxiety predicts maternal fear of negative child evaluation.

The link between maternal social anxiety and maternal worry was also positive. The Parental Worry Measure was developed to assess general maternal worry and is not specific to social anxiety concerns. Nevertheless, mothers’ social anxiety was associated, suggesting that mothers with social anxiety not only worry about their child’s social success but also about more general child issues, such as child safety. This finding is consistent with results from the Fisak et al. (2012) study, that parents with high levels of anxiety tended to worry on a daily bases. However, the current study is the first to our knowledge to document that social anxiety disorder in particular is associated positively with maternal worry.

Additionally, two types of maternal expectancies – academic and household – were associated positively with maternal social anxiety. Socially anxious mothers may be sensitive about their child’s academic success because it reflects on their parenting; for example, parents
are expected to help their child do homework and succeed in school as well as provide the resources needed for academic success. The fact that household expectancies were positively associated with maternal social anxiety was unexpected. This subscale assessed primarily issues related to children doing chores and being responsible, so perhaps it reflects again on issues of parental success; for example, a successful parent should be able to get their child to do chores. Contrary to expectations, two types of maternal expectancies—social and general success—were not associated with maternal social anxiety. Perhaps the general success subscale was exactly that—too general—to tap into mothers’ social anxiety concerns. On the other hand, the lack of association between maternal social anxiety and expectancies of child social success was unexpected. Perhaps mothers with social anxiety do not necessarily encourage their children to be socially active or highly expect them to succeed socially; this may be due to some individual differences such as multiple diagnoses. Although statistically not significant, mothers may expect their children to be social and not be avoidant like themselves. This finding is somewhat contrary to the research by Barrett and colleagues (1996) which found that parents often provide children with negative messages about being social by questioning their social abilities.

Overall, these findings suggest that maternal social anxiety, even when reported on retrospectively by their grown children, is linked to a number of different types of maternal anxiety-related cognitions.

**Maternal Social Anxiety and Overprotective Behavior**

The current study examined how maternal social anxiety predicted maternal behavior by examining whether maternal behavior, specifically overprotective parenting behavior, related to maternal social anxiety. Although a number of recent studies have examined the link between maternal overprotectiveness and child social anxiety (c.f., Burgess et al., 2005; Hudson & Rapee,
2000; Taylor & Alden, 2006), not many studies have examined the relationship between maternal social anxiety and overprotective parenting behavior. In this study, maternal social anxiety was correlated positively with maternal overprotective behavior, which was inconsistent with a previous study finding that maternal anxiety disorder is not necessarily linked to maternal controlling behaviors (McClure et al., 2001). Because of these contrary results, further studies might be needed to understand the link between maternal social anxiety and maternal overprotective parenting behavior.

Additionally, maternal social anxiety was related positively to rejecting and negatively to supportive maternal parenting behaviors. Mothers with social anxiety, instead of being warm and supportive, are possibly more critical of their child, which may again reflect their desire to avoid having the child be evaluated negatively. That is, they may intend for their criticism to help the child improve various aspects of their functioning.

Mediators between Maternal Social Anxiety and Student Social Anxiety

Maternal fear of negative child evaluation, maternal worry, and maternal overprotective parenting behavior were associated with maternal social anxiety; therefore, these variables were also examined as predictors for student current levels of social anxiety. Only maternal fear of negative child evaluation was a partial mediator in the relationship between maternal and student social anxiety. This finding was consistent with previous research that child report of maternal fear of negative child evaluation partially mediated the association between maternal and child social anxiety (Schreier & Heinrichs, 2010).

Maternal worry predicted student social anxiety, but failed as a mediator because maternal worry was not a significant predictor of student social anxiety while controlling for maternal social anxiety. So, maternal worry is linked to student social anxiety; however, most of
this variance seems to be attributed to the direct association between maternal and offspring social anxiety. This finding provides further understanding of the link between maternal worry about their child in the development and maintenance of child anxiety while supporting the previous study finding (Fisak et al., 2012). However, in zero-correlation study, maternal overprotective parenting behavior was not significant in a relationship with student social anxiety. Therefore, both maternal worry and maternal overprotective parenting behavior failed to work as mediators between maternal social anxiety and student social anxiety. Another interesting finding was that maternal worry was related positively to maternal overprotective parenting behavior, suggesting that excessive maternal worry leads to overprotection (see Table 3). This finding confirmed the potential influence of maternal worry in developing negative parenting behaviors such as overprotective behavior (Fisak et al., 2012).

**Current Relationship**

The participants’ current relationship with their mothers was examined to determine potential biases in retrospective reporting. Three aspects of the current mother-child relationship were addressed: alienation, communication, and trust. These three relationship issues were associated in expected ways to retrospective reports. For example, alienation from mother was related positively to past issues such as maternal social anxiety, maternal fear of negative child evaluation, and maternal worry. Thus, it appears that if parents displayed these kinds of anxious cognitions when their children were 12 years old, this type of interaction may have influenced the mother-child relationship, resulting in students being more likely to report alienation in college. Another interpretation, though, could be that if a college student were to develop social anxiety, then she/he may also have negative thoughts about their parents that are biased in nature and which could cause her/him to retrospectively report in a more negative manner. However,
given that finding were in the expected direction and upheld by and large by earlier research, it seems most likely that participants were responding a relatively unbiased manner about these issues.

**Summary**

In this study, the young adults’ childhood maternal social anxiety was positively linked to the young adults’ current level of social anxiety. When mothers’ social anxiety is high, the mothers are also likely to fear others’ negative evaluations of their child, frequently worry about things related to their child, and show overprotective behavior around their child. Also, when mothers frequently worry about their child (when the child is 12 years old), the child is likely to develop high level of social anxiety in his or her young adulthood. Likewise, when mothers fear others’ negative evaluation of their child (when the child is 12 years old), the child is likely to develop high level of social anxiety in his or her young adulthood. However, unlike maternal fear of negative evaluation, maternal worry does not mediate the link between maternal social anxiety and offspring social anxiety. Parental expectancies in social and general success dimensions do not have significant relationships with mothers’ social anxiety, whereas these two dimensions are correlated positively with the offspring’s social anxiety in his or her young adulthood.

**Limitations and Directions for Future Research**

The current study had several limitations. First, retrospective student-reported instruments were used to measure childhood maternal social anxiety. Maybe using a mother’s self-reported instrument on measuring social anxiety would have provided a more accurate level of maternal social anxiety (e.g., Schreier & Heinrichs, 2010). Although maternal cognitions and behavior could be easily observed by the child, self-report would likely be more accurate. For
example, unless mothers speak out loudly about their feelings, it is hard to know if “My mother finds it difficult to disagree with another’s point of view.” As a 12 year old, understanding these detailed emotions associated with his or her mother’s social interactional behaviors might be difficult, unless the mother openly discussed these difficulties. In addition, remembering back to a prior age can be difficult, especially for student with poor long-term memory.

Another potential limitation of this study is its correlational design. Although investigating the links between the main variables was possible, determining direction or causality between these variables was impossible because it was not a longitudinal study.

Future research in this area could examine why maternal worry, expectancies in social and general success dimensions, and maternal overprotective parenting behavior did not mediate the link between maternal social anxiety and offspring social anxiety. Some other suggestions exist for future research. One suggestion would be to further explore the causality between maternal social anxiety and offspring social anxiety. A longitudinal study would be needed to understand the direction between these two variables. Also, it would be interesting to compare mother and father reports of parenting cognitions and behaviors to confirm previous studies that have shown only maternal reports with significant results. Finally, future research could examine different mediators of each type of anxiety such as social anxiety, generalized anxiety, and panic disorder. It would be interesting to confirm multi-finality; find whether some mediators are overlapped or distinguished among different types of anxiety.

Clinical Implications

Although the results of this study are tentative, they could be helpful for treating social anxiety disorder, as these findings could provide insight into the important role of maternal social anxiety and maternal cognitions in the development of offspring social anxiety.
Understanding and improving the offspring-mother relationship issues from childhood to the current state could be critical in treatment. Even if mother is not diagnosed with social anxiety disorder, if the child or student is diagnosed with social anxiety, then it could be helpful if the mother also becomes involved in the treatment process. If the mother is socially anxious, then those cognitions can be targeted in treatment; if the mother is not socially anxious, then they can model appropriate cognitions and approach behaviors. For example, they could provide reinforcement for the child undertaking social activities. Maternal influences can be overlooked in treatment of social anxiety disorder if the treatment is just focused on peer relationships or current problems caused by the disorder.

Another important finding of this study is that the link between maternal social anxiety and offspring social anxiety is partially mediated by maternal fear of negative child evaluation. This result could help therapists in educating mothers of school-aged children how the expression of maternal fear of negative child evaluation could play a role in the development of their child’s social anxiety. Mothers should be more aware of the fact that their anxious feelings and emotions expressed in social situations such as fear of possibly getting evaluations from other people could increase the level of child’s social anxiety.
References


Figure 1. Hypothesized mediated model between maternal social anxiety (R = retrospective) and student social anxiety (C = current), as mediated by the retrospectively reported Maternal Cognitions (Fear of Negative Child Evaluation, Maternal Worry, and The Social and General Success subscales of Parental Expectancies) and Behaviors (Overprotective Parenting Behavior).
Figure 2. A mediated model between maternal social anxiety (R = retrospective) and student social anxiety (C = current), as mediated by the retrospectively reported maternal Fear of Negative Child Evaluation. Sobel’s test, $z = 2.55, p = .005$.

* $p < .01$; ** $p < .001$
Table 1

Ages (in years) of Student Participants

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97


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<tr>
<th></th>
<th>M</th>
<th>SD</th>
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<tr>
<td>FNCE</td>
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<tr>
<td>PWM</td>
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<tr>
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<tr>
<td>sEMBU-OP</td>
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<td>SIAS (mo)</td>
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<td>14.61</td>
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*Note.* stu = student self-report; mo = student mother-report; SIAS = Social Interaction Anxiety Scale; FNCE = Fear of Negative Child Evaluation; PWM = Parent Worry Measure; PES-S = Parental Expectancies Social; PES-GS = Parental Expectancies General Success; sEMBU-OP = short Egna Minnen Betraffande Uppfostran Overprotective; IPA-T = Inventory of Parent Attachment Parent Trust; IPA-C = Inventory of Parent Attachment Parent Communication; IPA-A = Inventory of Parent Alienation
Table 3  *Zero-Order Correlations between Main Study Variables*

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<td>.25*</td>
<td>.30*</td>
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<td>5. PES-GS</td>
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<td>-.60*</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>10. SIAS (mo)</td>
<td>.36*</td>
<td>.41*</td>
<td>.48*</td>
<td>.12</td>
<td>-.14</td>
<td>.23*</td>
<td>-.43*</td>
<td>-.34*</td>
<td>.26*</td>
<td>-</td>
</tr>
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*Note.*  stu = student self-report; mo = student mother-report; SIAS = Social Interaction Anxiety Scale; FNCE = Fear of Negative Child Evaluation; PWM = Parent Worry Measure; PES- S = Parental Expectancies Social; PES-GS = Parental Expectancies General Success; sEMBU-OP = short Egna Minnen Betraffande Uppfostran Overprotective; IPA-T = Inventory of Parent Attachment Parent Trust; IPA-C = Inventory of Parent Attachment Parent Communication; IPA-A = Inventory of Parent Alienation

*p < .05; **p < .001*
Appendix
Scales Administered

Demographic Questions

Please take your time and answer each question. Some items require a written response while others require you to select one of the options provided. Thanks for your time and effort.

1) Enter your age in years _______

2) What is your gender?
   a. Male
   b. Female

3) How do you usually describe yourself?
   a. White or Caucasian
   b. Black or African American
   c. Hispanic-American or Latino/a-American
   d. Asian-American or Pacific Islander
   e. Native American, Alaskan Native, or Native Hawaiian
   f. Biracial or Multiracial
   g. Other

4) How many siblings do you have? ________

5) When you were 12 years old, describe your relationship with your mother
   a. I lived with my biological mother.
   b. I did not live with my biological mother but I had a relationship with her.
   c. I never had a relationship with my biological mother but had a relationship with a similar mother figure (e.g., step-mother). Please describe: ____________
   d. I never had a relationship with my biological mother or any similar mother figure (e.g., step-mother).
Fear of Negative Child Evaluation (FNCE)

This questionnaire asks you about **general worries and fear of negative child evaluation expressed by your mother when you were 12 years old (when you would probably have been in the seventh grade)**. Please answer every item.

0 = Never
1 = Seldom
2 = Often
3 = Most of the time

1) My mother was concerned about what other might say about me.
2) My mother was worried that others would not like me.
3) My mother was afraid that others would think poorly of me.
4) My mother was concerned that others would talk bad about me.
Parent Worry Measure (PWM)

Below is a list of worries that mothers may experience in relation to their child. We would like to know how frequently your mother expressed these worries when you were 12 years old (when you would probably have been in the seventh grade). Please think back and answer following questions by selecting the answer that applied to your mother the most. Remember that there is no right or wrong answer.

0 = Never/Almost Never
1 = Rarely
2 = Sometimes
3 = Often
4 = Always/Almost Always

1) My mother worried that I would be disliked or rejected by others.
2) My mother worried that I wouldn’t be able to handle things in the future once I grew up.
3) My mother was afraid that something bad might happen to me.
4) My mother worried about me getting into trouble.
5) My mother worried about me doing dangerous things.
6) My mother worried about me making a mistake.
7) My mother worried when I did something on my own.
8) My mother worried when she didn’t know what I was doing.
9) My mother worried that I would have a hard time finding a boyfriend or girlfriend when I get older.
10) When I played actively, my mother worried that I would get hurt.
11) When I was not with my mother, she worried whether or not I was ok.
12) My mother worried about my future.
13) My mother worried that I would be harmed by an animal.
14) My mother worried about my physical health.
15) My mother worried about my emotional well-being.
16) My mother worried about my ability to learn and succeed in school.
17) My mother worried that I might get bullied or teased at school.
18) My mother worried that I might take illegal drugs when I get older.
19) My mother worried that I might fall behind in schoolwork.
20) My mother worried that other children wouldn’t accept me.
21) My mother worried that I wouldn’t be able to control my behaviors.
22) My mother worried that someone might intentionally harm me.
23) My mother worried that I might get hurt in a traffic accident.
24) My mother worried that someone might try to abduct me.
25) My mother worried that I might start smoking when I get older.
26) My mother worried that I might get involved with the wrong crowd.
27) My mother worried that I might get hooked on computer games or video games.
28) My mother worried that I would develop psychiatric or mental health problems.
29) My mother worried that I would become overwhelmed with stress.
30) My mother was concerned that I would get injured when playing with other children.
31) My mother was concerned that I would get injured or harmed in sports.
32) My mother was concerned that I wouldn’t be as intelligent or smart as other children.
33) My mother worried that I might get a life-threatening illness such as leukemia or meningitis.
Parental Expectancies Scale (PES)

The following are statements that could be made by any mother about her child. Please indicate to what extent these statements reflected your mother's concerns, perceptions, and expectations about you when you were 12 years old (when you would probably have been in the seventh grade). Please circle the number representing the level to which each statement is "true of your mother."

0 = Never or Almost Never True
1 = Seldom True
2 = Sometimes True
3 = True More Often Than Not
4 = Usually True
5 = Almost Always or Always True

1) My mother expected academic success would be an important goal for me.
2) Concerning extra-curricular activities such as athletics, dance, music instruction, art instruction or other organized hobbies, my mother expected me to always do my best.
3) My mother expected me to pursue only those activities at which I could excel.
4) My mother expected that popularity and an active social life would be important goals for me.
5) My mother expected me to receive better grades in school.
6) My mother expected me to become more responsible and self-sufficient in home-related activities.
7) My mother expected to play an important role in helping me to socialize, establish new friendships, and maintain them.
8) My mother expected me to perform better in my extra-curricular activities such as athletics, dance, music instruction, art instruction, or other organized hobbies.
9) My mother expected that experiences of success would be the best reinforcers for my self-confidence.
10) My mother expected me to increase the quality and/or quantity of my friendships.
11) My mother expected me to participate in many extra-curricular activities such as athletics, dance, music instruction, art instruction, or other organized hobbies.
12) My mother's expectations for my peer relations differed from my own.
13) My mother expected me to do chores in the home on a regular basis.
14) My mother expected that I would achieve my full potential in life.
15) My mother's academic expectations for me differed from my own.
16) My mother expected that I would distinguish myself with top performances in my extra-curricular activities.
17) My mother believed that whether I became a successful adult depended greatly upon the guidance and encouragement provided by her.
18) My mother expected me to take initiative in helping out in the home.
19) If I did not receive a good grade in school, my mother always expected me to try harder.
20) My mother expected me to exhibit exemplary behavior and be very well-mannered when we had guests in our home.
Scoring:
The Academic scale consists of items currently numbered 1, 5, 15, 19.
The Social scale is items 4, 7, 10, 12.
The General Success scale is items 3, 9, 14, 17.
The Extra-curricular scale is items 2, 8, 11, 16.
The Household scale is items 6, 13, 18, 20.
The 27-item Short Egna Minnen Betraffande Uppfostran – My memories of upbringing (The 27-item sEMBU)

In filling out this questionnaire, you should try to remember your mother's behavior towards you when you were 12 years old (when you would probably have been in the seventh grade).

For each question, consider which alternative best describes how your mother behaved toward you.

1 = Never
2 = Sometimes
3 = Often
4 = Always

1) Did you feel that your mother interfered with everything that you did?
2) Did your mother show with words and gestures that she liked you?
3) If you had done something foolish, could you then go to your mother and make everything right again by asking for her forgiveness?
4) Did your mother treat you badly in comparison with how she treated your sister(s) or brother(s)? – If you don't have any sibling, answer in relation to how your friends' mothers treated them.
5) Did you feel that your mother liked you?
6) Did your mother forbid you to do things other children were allowed to do because she was afraid that something might happen to you?
7) If things went badly for you, did you then feel that your mother tried to comfort and encourage you?
8) If you had a difficult task in front of you, did you feel support from your mother?
9) Did you feel that your mother felt it was your fault when she was unhappy?
10) Did your mother demonstrate that she was fond of you?
11) Did you feel that your mother trusted you so that you were allowed to do things on your own?
12) Do you think that your mother respected your opinions?
13) Do you think that your mother was mean and grudging toward you?
14) Do you think that your mother tried to make your adolescence stimulating, interesting, and instructive (for instance by giving you good books, arranging for you to go on camps)?
15) Did your mother usually praise you?
16) Were you able to seek comfort from your mother when you were sad?
17) Did your mother usually criticize you and tell you how lazy and useless you were in front of others?
18) Did your mother usually take an interest in what kind of friends you had?
19) Did your mother punish you hard, even for small things?
20) Did you wish your mother would worry less about what you were doing?
21) Did your mother show an interest in your interests and hobbies?
22) Did your mother put decisive limits on what you were and were not allowed to do – to which she then stuck rigorously?
23) Do you think that your mother's anxiety that something might happen to you was exaggerated?
24) Did you feel that warmth and tenderness existed between you and your mother?
25) Was your mother sour and angry with you without letting you know the reason?
26) Did you feel that your mother was proud when you succeeded in something you
    had undertaken?
27) Did your mother usually hug you?

Scoring:
The Supportive scale consists of items currently numbered 2, 3, 5, 7, 8, 10, 12, 14, 15, 16,
18, 21, 24, 26, and 27.
The Rejecting scale is items 4, 9, 13, 17, 19, and 25.
The Overprotective scale is items 1, 6, 11, 20, 22 and 23. Reverse the scoring of item 11.
Social Interaction Anxiety Scale (SIAS) – My Mother

For each question, please choose a number to indicate the degree to which you feel the statement is characteristic or true of *your mother in your childhood*. The rating scale is as follows:

0 = Not at all characteristic or true of her
1 = Slightly characteristic or true of her
2 = Moderately characteristic or true of her
3 = Very characteristic of her
4 = Extremely characteristic or true of her

1) My mother got nervous if she had to speak with someone in authority.
2) My mother had difficulty making eye-contact with others.
3) My mother became tense if she had to talk about herself or her feelings.
4) My mother found difficulty mixing comfortably with the people she worked with.
5) My mother found it easy to make friends of her own age.*
6) My mother tensed-up if she met an acquaintance on the street.
7) When mixing socially, my mother felt uncomfortable.
8) My mother felt tense if she was alone with just one person.
9) My mother was at ease meeting people at parties, etc.*
10) My mother had difficulty talking with other people.
11) My mother found it easy to think of things to talk about.*
12) My mother worried about expressing herself in case she appeared awkward.
13) My mother found it difficult to disagree with another’s point of view.
14) My mother had difficulty talking to an attractive person of the opposite sex.
15) My mother worried that she wouldn’t know what to say in social situations.
16) My mother was nervous mixing with people she didn’t know well.
17) My mother felt she would say something embarrassing when talking.
18) When mixing in a group, my mother worried if she would be ignored.
19) My mother was tense mixing in a group.
20) My mother was unsure whether to greet someone she knew only slightly.

* = Denotes reverse coding
Social Interaction Anxiety Scale (SIAS) - Self

For each question, please choose a number to indicate the degree to which you feel the statement is characteristic or true of you in the current state. The rating scale is as follows:

0 = Not at all characteristic or true of me
1 = Slightly characteristic or true of me
2 = Moderately characteristic or true of me
3 = Very characteristic of me
4 = Extremely characteristic or true of me

1) I get nervous if I have to speak with someone in authority (teacher, boss, etc).
2) I have difficulty making eye-contact with others.
3) I become tense if I have to talk about myself or my feelings.
4) I find difficulty mixing comfortably with the people I work with.
5) I find it easy to make friends of my own age.*
6) I tense-up if I meet an acquaintance on the street.
7) When mixing socially, I am uncomfortable.
8) I feel tense if I am alone with just one person.
9) I am at ease meeting people at parties, etc.*
10) I have difficulty talking with other people.
11) I find it easy to think of things to talk about.*
12) I worry about expressing myself in case I appear awkward.
13) I find it difficult to disagree with another’s point of view.
14) I have difficulty talking to an attractive person of the opposite sex.
15) I find myself worrying that I won’t know what to say in social situations.
16) I am nervous mixing with people I don’t know well.
17) I feel I’ll say something embarrassing when talking.
18) When mixing in a group, I find myself worrying I will be ignored.
19) I am tense mixing in a group.
20) I am unsure whether to greet someone I know only slightly.

* = Denotes reverse coding