

Adult Attachment and Parental Bonding: Correlations Between Perceived Relationship Qualities and Self-Reported Anxiety



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Adult attachment and parental bonding have been linked to anxiety disorders, but rarely have these associations been demonstrated in the same study. To fill this gap in the research literature, we utilized several different self-report measures to examine the relationships among adult attachment style, memories of early bonding experiences, and five types of anxiety in a sample of 201 undergraduate psychology students. Significant correlations were found between early bonding memories and secure, preoccupied and fearful attachment styles, but not between early bonding memories and dismissing attachment style. Secure attachment style negatively correlated with every type of anxiety, whereas preoccupied and fearful attachment styles positively correlated with every type of anxiety. Dismissing attachment style did not correlate with any anxiety type. Results also indicated correlations between early bonding memories and both post-trauma and social anxiety symptoms, but there was no relationship between bonding and obsessive-compulsive symptoms, panic or worry.

Keywords: attachment, bonding, anxiety, parental, relationships

The attachment work of John Bowlby (1988) affords clinicians and researchers the opportunity to view psychopathology as relationally based, rather than as unique to the individual to whom a specific label has been given. Anxiety is a particularly fitting place to focus this type of investigation since understanding the meaning and function of anxiety within the context of human development lies at the center of attachment theory. Bowlby integrated the time-honored notion that the early child-caregiver bond is critical to the child's survival and well-being into his knowledge of scientific facts and meaning and provided an interpersonal understanding of healthy as well as pathological development. Bowlby's thoughts, flowing as they did from psychoanalysis and object relations, revolutionized the analytic world by removing dysfunction from the center of the individual and placing it in the space between interacting humans. Through the use of instruments designed to measure attachment style, early bonding memories and five different types of anxiety, this study utilizes Bowlby's viewpoint as a springboard from which to examine the correlations between adults' perception of their past and present relational experiences and their current levels of anxiety.

Relationship of Attachment and Bonding to Anxiety Disorders

There is a sizeable body of research suggesting a relationship between anxiety and attachment or bonding experiences (e.g., Cassidy, Lichtenstein-Phelps, Sibrava, Thomas, & Borkovec, 2009; Cavedo & Parker, 1994; Chorpita & Barlow, 1998; Eng & Heimberg, 2006; Eng, Heimberg, Hart, Schneier, & Liebowitz, 2001; Manicavasagar, Silove, Wagner, & Hadzi-Pavlovic, 1999; Marazziti et al., 2007; Meites, Ingram, & Siegle, 2012; O'Connor & Elklit, 2008; Pacchierotti et al., 2002; Parker, 1979; Renaud, 2008; Seganfredo et al., 2009; Turgeon, O'Connor, Marchand, & Freeston, 2002). We will first

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review the literature explicating the anxiety–attachment paradigm and then consider research that has looked at anxiety and bonding, before turning to the studies that have incorporated measures of both attachment and bonding in an examination of individuals with specific anxiety states.

Anxiety and Attachment

Substantial investigation has considered anxiety-attachment associations. Potential links have been found between generalized anxiety disorder (GAD) and attachment, with indications that increasing perceptions of difficult early attachment experiences are tied to a risk for GAD (Cassidy et al., 2009). Furthermore, investigation has shown individuals with GAD to report less secure parental attachment, less trust, increased difficulty with communication, and more alienation than individuals without the disorder (Eng & Heimberg, 2006). In other work, participants with panic disorder (PD), obsessive-compulsive disorder (OCD), major depressive disorder or bipolar disorder were found to have higher levels of preoccupied attachment style, and participants without these conditions had higher levels of secure attachment (Marazziti et al., 2007). Social anxiety also has been considered in light of adult attachment, and individuals with an anxious-preoccupied attachment style have reported higher levels of social fear and avoidance than participants with a secure attachment style (Eng et al., 2001).

Attachment anxiety and avoidance have been connected to increased symptoms of post-traumatic stress disorder (PTSD) in veterans (Renaud, 2008). However, the vast majority of participants in Renaud's (2008) study reported a preference for attachment avoidance (either fearful or dismissing), and PTSD symptoms were higher among these individuals. In young adults, secure attachment has been associated with fewer PTSD symptoms; however, dismissing and fearful attachment preferences have been tied to a higher number of PTSD symptoms (O'Connor & Elklit, 2008). Associations of this nature may indicate that secure attachment offers potential protection against the development of PTSD, whereas dismissing and fearful attachment may increase risk (O'Connor & Elklit, 2008).

Anxiety and Bonding

A noteworthy number of studies have looked at the relationship between anxiety and bonding. For instance, associations have been demonstrated between both PD and GAD and the condition of affectionless control (lack of attunement and overprotection) by parents (Chorpita & Barlow, 1998). In other research (Chambless, Gillis, Tran, & Steketee, 1996), people with PD or OCD also most commonly perceived their parents' style of caregiving to fall within the affectionless control category. In addition, individuals who rated their mothers most highly on the overprotection scale experienced the earliest onset of anxiety disorders.

Associations have been found between mother overprotection and PD in men and between father overprotection and PD in women (Seganfredo et al., 2009), and a relationship has been noted between perception of parental overprotection and adult symptoms of separation anxiety (Manicavasagar et al., 1999). Furthermore, in a study matching participants diagnosed with PD and healthy controls, individuals with PD reported lower parental care than those without the disorder (Pacchierotti et al., 2002). A relationship also has been demonstrated between low parental care and generalized fear among a large sample of undergraduates (Meites et al., 2012). Other researchers have conceded that the development of GAD may be related to unfavorable parental behavior (Silove, Parker, Hadzi-Pavlovic, Manicavasagar, & Blaszczynski, 1991). However, they also suggested the alternative possibility that maternal overprotection could be a response to early signs of anxiety in people with PD.

Early bonding memories and obsessionality have been shown to be related as well. Positive correlations were noted between obsessionality and parental overprotection for both males and

females, and between obsessionality and maternal care in females; however, negative correlations were found between obsessionality and parental care in males (Cavedo & Parker 1994). In other work, outpatients with OCD or PD remembered their parents as being more overprotective than did a control group of non-anxious participants, leading researchers to the conclusion that parental overprotection may increase the risk that children will develop anxiety disorders (Turgeon et al., 2002). However, in another study investigating the link between early bonding memories and obsessive-compulsive behaviors in a non-clinical population, researchers concluded that low parental care may represent a risk for emotional suffering in adulthood, but does not predict a specific psychiatric disorder (Mancini, D'Olimpio, Prunetti, Didonna, & Del Genio, 2000).

The relationship between early bonding memories and agoraphobia or social phobia also has been assessed (Parker, 1979). Parker (1979) found that people with agoraphobia reported their mothers to be less caring than did participants in the control group, but differed in no other way. Individuals with social phobia reported both their mothers and fathers to be less caring and more overprotective than did the control group individuals.

Anxiety, Attachment and Bonding

Despite substantial evidence of correlation between adult attachment and anxiety and between early bonding memories and anxiety, fewer empirical studies explicitly differentiate between adult attachment and parental bonding constructs, or consider both in relation to specific anxiety types. Here, we will review studies that have investigated the association between anxiety and both adult attachment and parental bonding.

Myhr, Sookman, and Pinard (2004) examined adult attachment and early parental bonding memories in a sample of individuals with OCD or depression. More relationship anxiety was evident among participants with OCD or depression and more dependency discomfort (avoidance) was seen in participants with depression and in unmarried participants with OCD. With regard to early bonding memories, individuals with OCD did not differ from controls, and there was no clear correlation between adult attachment and early bonding memories. The researchers suggested two potential reasons for this finding: (a) the bonding instrument they were using may not have measured relational elements necessary for adult attachment security; or (b) the responses may have reflected a bias based on attachment security or specific diagnosis.

Ghafoori, Hierholzer, Howsepian, and Boardman (2008) investigated the protective value of adult attachment, parental bonding and divine love in adjustment to trauma experienced in the military. They found that current PTSD symptoms in veterans who participated in the study negatively correlated with secure attachment and positively correlated with insecure attachment. However, no significant relationship emerged between current PTSD symptoms and early childhood bonding memories. Findings did indicate that adult attachment style contributes to the severity of PTSD and that perceived parental care moderates that relationship (i.e., since parental care negatively correlated with insecure attachment).

Yarbro, Mahaffey, Abramowitz, and Kashdan (2013) used online self-report measures to explore the relationship between memories of low care in early child-caregiver relationships and reports of obsessive beliefs in a sample of undergraduate college students. Their findings indicated significant associations between the two variables, lending support to the idea that there is a relationship between obsessive beliefs and affectionless and neglectful parenting (Yarbro et al., 2013). The researchers also considered whether attachment anxiety or avoidance may mediate this relationship. Through the use of hierarchical regression models, they demonstrated that attachment anxiety

may serve as a partial mediator of the relationship between memories of low care and self-reported obsessive beliefs, but that attachment avoidance did not function in this way (Yarbro et al., 2013).

As well as providing additional support in favor of the relationship between attachment, bonding and anxiety, the Myhr et al. (2004), Ghafoori et al. (2008) and Yarbro et al. (2013) studies lead us to consider a further possibility. We offer the idea that adult attachment and parental bonding may address qualitatively distinct aspects of human interaction, especially when considered in light of different types of anxiety. The work of the aforementioned authors highlights the need to investigate adult attachment and parental bonding as distinct yet potentially interdependent constructs that illuminate, from different viewpoints, the intricacies of interpersonal connection.

Constructs of Adult Attachment and Parental Bonding

The construct of adult attachment may be understood as resolving to two primary dimensions: model of self and model of others (Bartholomew & Horowitz, 1991). In Bartholomew and Horowitz's (1991) work, the degree of positivity an individual experiences with regard to his or her representation of self meets the degree of positivity that person experiences with regard to his or her representation of others to yield four potential patterns of preference in relationships. Those who have a positive view of themselves and of others are at ease in intimate and in autonomous situations and have a secure style of attachment. Individuals with a preoccupied style of attachment have a negative view of self, but see others in a positive light; they look to their intimate relationships for fulfillment and validation. The fearful style of attachment involves a wish for closeness that remains unfulfilled due to fears of rejection, whereas the dismissing style is typified by denial that intimacy with others is needed or desired. According to Bartholomew and Horowitz's (1991) model, the fearful style reflects a negative view of self (undeserving of the love and support of others), as well as a negative view of others, whereas the dismissing style reflects a positive view of self (minimizing the awareness of needs or distress) and a negative view of others.

The construct of parental bonding and its classificatory scheme also can be understood as resolving to two primary dimensions: (perceived) parental care and (perceived) parental overprotection (Parker, Tupling, & Brown, 1979). The dimensions are presumed to contribute to the bond that develops between a parent and a child early in life and, when considered together, result in four potential bonding experiences. Optimal bonding is said to occur when parental care (emotional warmth and acceptance) is high and overprotection (psychological control and intrusion) is low; whereas affectionate constraint refers to bonding in which parents are highly overprotective of their children while exhibiting some caring behaviors toward them (Gladstone & Parker, 2005). When parental care and overprotection are both low, the parent-child bond that develops may be weak or absent, and when care is low (emotional coldness and rejection) and overprotection is high, affectionless control typifies the bonding relationship.

Although the constructs of adult attachment and parental bonding tap into the nature of relationship quality, each construct views human connection from a different vantage point. Whereas Bartholomew and Horowitz's (1991) four-category adult attachment model considers individuals' perceptions of their current close relationships with peers, Parker et al.'s (1979) conceptualization of parental bonding involves recollections of early relationships with caregivers. That is, the attachment construct targets the manner in which people perceive their own worth and that of others in the context of current relationships; the bonding construct, however, targets a present-day characterization of past caregiver style. Rather than addressing the perception of one's upbringing, adult attachment focuses on a current sense of worth and the expectation of how others will respond

in relationship. Parental bonding, in contrast, focuses upon memories of early child–caregiver interactions and the sense of how one was treated by one’s caregivers.

In consideration of the distinctions between the adult attachment and parental bonding constructs, we may view the assessment of adult attachment as eliciting a general sense of how one fits into current relationships and the assessment of parental bonding as specific to the memory of past child–caregiver interactions. In other words, adult attachment and parental bonding, while certainly interrelated in that both tap into the quality of relationships individuals form with others, nonetheless do not actually target the same general conceptualization of relationship quality, but are instead distinct constructs that capture slightly different aspects of human interaction from divergent points of view.

Purpose of the Study and Predictions

This study, in light of the relative paucity of research involving single-sample assessments of our constructs of interest, was designed to address more systematically the interconnections that may exist between adult attachment, memories of early parental bonding experiences and various forms of anxiety. To accomplish this, we specifically targeted adults’ reports of early interactions with caregivers, as well as their present interpersonal approach in relation to five different types of self-reported anxiety: obsessive-compulsive behavior, panic symptomatology, experience of worry and generalized anxiety, post-trauma symptomatology, and experience of social anxiety.

Predictions for the study flowed from our premise that adult attachment and parental bonding are interconnected but separate aspects of relational experience. Although Myhr et al. (2004) found no significant correlation between attachment and early bonding memories, the authors suggested potential reasons for this finding, including instrument limitations and attachment or diagnosis biases of the participants. Taking into account this explanation and our premise that the attachment and bonding constructs, while interrelated, capture relationship quality from different vantage points, we first conjectured that we would find a low to moderate relationship between these two variables.

With respect to relationships among adult attachment and anxiety, since the preponderance of the literature (Cassidy et al., 2009; Eng & Heimberg, 2006; Eng et al., 2001; Ghafoori et al., 2008; Marazziti et al., 2007; Myhr et al., 2004; O’Connor & Elklit, 2008; Renaud, 2008) indicates associations between self-reports of adult attachment style and self-reports of anxiety, we predicted that the tendency toward each of several different anxiety types would negatively correlate with secure attachment style and positively correlate with the insecure styles of attachment, and that these associations would be strong.

With respect to relationships between parental bonding and anxiety, some of the literature indicates a clear association (Chambless et al., 1996; Chorpita & Barlow, 1998; Pacchierotti et al., 2002; Parker, 1979; Turgeon et al., 2002; Yarbrow et al., 2013), whereas other investigations have yielded mixed results (Cavedo & Parker, 1994; Ghafoori et al., 2008; Mancini et al., 2000; Manicavasagar et al., 1999; Myhr et al., 2004; Parker, 1979; Silove et al., 1991). Given these inconsistencies and our assumption of adult attachment and parental bonding as measuring distinct aspects of relational quality, we anticipated fewer significant correlations between parental bonding and different forms of anxiety. Nevertheless, where significant correlations arose, we predicted positive correlations between anxiety and the overprotection dimension of parental bonding and negative correlations between anxiety and the care dimension.

Method

Participants

Participants for the study were 201 undergraduate psychology students (152 female, 48 male, with one person not reporting gender) at a university located in the Southwestern United States. Latino/Hispanic participants comprised 36.8% of the sample and Caucasian participants comprised 49.8%. The remaining participants reported race or ethnicity as African American (3%), Asian (2%), Native American (2%), Pacific Islander (.5%), or Other (6%). Participants' ages ranged from 17 to 50 years, with a mean of 19.86 ($SD = 3.78$).

Procedures

Approval for the study was granted by the Institutional Review Board at our university. Participants were recruited through a Web-based recruitment system and their participation was an optional part of their psychology course requirement. A description of the study and the dates and times during which data collection would take place were posted on the Web site and participants signed up for the test period that was convenient for them. As participants arrived at the testing location, they were greeted by the test administrator and seated around a table. After informed consent was explained and a questionnaire packet provided, participants were allowed up to 1.5 hours to complete the surveys. A maximum of 25 participants were permitted to sign up for each test period.

Variables and Instrumentation

Relationship Scales Questionnaire. To index adult attachment, we used the Relationship Scales Questionnaire (RSQ; Griffin & Bartholomew, 1994). The RSQ consists of 30 items and asks participants to rate, on a 5-point scale, how well each of the items fits their perception of the style they use in their close relationships. Individuals are scored on each of four attachment patterns: secure, fearful, preoccupied, and dismissing. Internal consistencies for the RSQ range from .41 for secure attachment to .71 for dismissing attachment. Although these alpha values may appear low, it is a natural result of combining two orthogonal dimensions, including model of self and model of others. It also is important to note that test-retest reliability may be inferred from the data on internal consistency, since the RSQ indexes attachment using a dimensional approach (Griffin & Bartholomew, 1994). A psychometric examination of the RSQ in a French population demonstrated good construct validity, test-retest reliability and internal consistency (Guédénéy, Fermanian, & Bifulco, 2010). We chose the RSQ for its widespread application in counseling and other mental health venues to study attachment as it relates to topics such as parental bonding and anxiety (Ghafoori et al., 2008; Yarbrow et al., 2013), perfectionism (Chen, Hewitt, & Flett, 2015), interpersonal sensitivity (Otani et al., 2014), and problematic substance use (Massey, Compton, & Kaslow, 2014).

Parental Bonding Instrument. To index parental bonding, we used the Parental Bonding Instrument (PBI) developed by Parker et al. (1979). The instrument consists of 25 items, including 12 parental care items and 13 parental overprotection items, and asks participants to rate on a 4-point scale how they remember their primary caregiver. A test-retest reliability study yielded a Pearson correlation coefficient for the care scale of .761 and a Pearson correlation coefficient for the overprotection scale of .628 (Parker et al., 1979). A comparison of the psychometric properties of the PBI and another measure of parenting behavior demonstrated that the PBI may be more stable over time (Safford, Alloy, & Pieracci, 2007), and a Persian version showed high internal consistency and test-retest reliability (Behzadi & Parker, 2015). We chose the PBI for its long history of utilization in the study of familial relationships. It continues to be a frequently employed instrument in the

investigation of caregiver–offspring interactions in the context of problems such as anxiety (Meites et al., 2012; Seganfredo et al., 2009), pathological gambling (Villalta, Arévalo, Valdepérez, Pascual, & Pérez de los Cobos, 2015), intermittent explosive disorder (Lee, Meyerhoff, & Coccaro, 2014) and suicidality (Goschin, Briggs, Blanco-Lutzen, Cohen, & Galynker, 2013).

Obsessive-Compulsive Inventory-Revised. To assess tendency toward obsessive-compulsive behavior, we used the Obsessive-Compulsive Inventory-Revised (OCI-R; Foa et al., 2002). This questionnaire consists of 18 items and asks participants to rate, on a 5-point scale, how much each item has bothered them in the last month. In their examination of the psychometric properties of the OCI-R, Foa et al. (2002) demonstrated that test–retest reliability ranged from .74 to .91 for individuals with OCD, and from .57 to .87 for non-anxious controls. In a recent psychometric examination, the OCI-R was shown to be valid, reliable and diagnostically sensitive (Wootton et al., 2015). The OCI-R also demonstrated good validity and reliability in an older adult population (Calamari et al., 2014).

Panic Disorder Severity Scale-Self Report. To assess tendency toward panic symptoms, we used the Panic Disorder Severity Scale-Self Report (PDSS-SR; Houck, Spiegel, Shear, & Rucci, 2002). The PDSS-SR consists of seven questions rated on a 5-point scale. The questions explore the presence and degree of panic in the lives of participants. Test–retest reliability was shown by Shear et al. (2001) to be satisfactory, with a Pearson correlation coefficient of .71. More recently, a psychometric evaluation of the self-report and clinician-administered versions of the PDSS indicated adequate or promising reliability and validity for each form (Wuyek, Antony, & McCabe, 2011). An examination of the Spanish version of the PDSS-SR demonstrated that the psychometric properties were comparable to those of other versions of this instrument (Santacana et al., 2014).

Penn State Worry Questionnaire. To assess tendency toward worry and generalized anxiety, we used the Penn State Worry Questionnaire (PSWQ; Meyer, Miller, Metzger, & Borkovec, 1990). This measure consists of 16 items and asks participants to rate, on a 5-point scale, how characteristic each item is of them. Meyer et al. (1990) found the PSWQ to possess high internal consistency and good test–retest reliability ($r[45] = .92, p < .001$) in clinical as well as in non-clinical samples, with alpha coefficients ranging from .88 to .95 for both groups. More recent examinations of the PSWQ have indicated that the instrument is psychometrically sound in African American populations (DeLapp, Chapman, & Williams, 2015), in online administrations of the Hungarian version (Pajkossy, Simor, Szendi, & Racsmany, 2015) and among older adults (Wuthrich, Johnco, & Knight, 2014). The PSWQ continues to be used to index worry in the study of therapeutic concerns such as psychological inflexibility (Ruiz, 2014), negative mood (Dash & Davey, 2012), and distress tolerance (Macatee, Capron, Guthrie, Schmidt, & Cogle, 2015).

PTSD Checklist-Civilian Version. To assess tendency toward post-trauma symptoms, we used the PTSD Checklist-Civilian Version (PCL-C; Weathers, Litz, Herman, Huska, & Kean, 1993). The PCL-C consists of 17 items asking participants to rate, on a 5-point scale, how often each item has bothered them in the last month. Weathers et al. (1993) studied veterans in their original research on the psychometric properties of the PCL and found that test–retest reliability was .96 over a period of 2 to 3 days. Recent investigation of the psychometric properties of the PCL-C indicated continued high internal consistency and high test–retest reliability in a non-clinical population; in addition, convergent and discriminant validity were satisfactory when compared to other assessments of PTSD (Conybeare, Behar, Solomon, Newman, & Borkovec, 2012).

Social Interaction Anxiety Scale. To assess tendency toward social anxiety, we used the Social Interaction Anxiety Scale (SIAS; Mattick & Clarke, 1998). The SIAS consists of 20 items. This

questionnaire asks participants to rate, on a 5-point scale, how characteristic each item is of them. In their examination of the psychometric properties of the SIAS, Mattick and Clark (1998) found the alpha coefficient for test-retest reliability to be .92 at both 4 weeks (range 3–5 weeks) and 12 weeks (range 11–13 weeks). More recently, the SIAS has been evaluated in several settings and formats, including the Internet (Hedman et al., 2010; Hirai, Vernon, Clum, & Skidmore, 2011) and in a shortened version (Fergus, Valentiner, Kim, & McGrath, 2014) with consistently adequate results. The SIAS continues to be used to index social anxiety in the study of mental health related topics such as participation in Alcoholics Anonymous (Moser, Turk, & Glover, 2015) and efficacy of cognitive-behavioral group therapy versus group psychotherapy (Bjornsson et al., 2011).

Data Analyses

Scoring. Scores and, when relevant, sub-scores were calculated for each instrument. Although the PBI can yield specific categories of parental bonding (i.e., optimal bonding or affectionless control), for the purposes of our study each dimension of this instrument (care and overprotection) was scored continuously. Like the PBI, the RSQ may be employed categorically; we elected, instead, to utilize the multi-item nature of the RSQ to permit participants to express their attachment preferences on a continuous scale so that overall attachment preferences would incorporate aspects of each of the four attachment patterns (Griffin & Bartholomew, 1994). This approach allowed us to develop a correlation matrix that included continuous scores not only for the PBI and RSQ, but also for each of the anxiety indices utilized. Data analysis also involved the calculation of Pearson's r for the relationships between RSQ and PBI scores, between RSQ scores and scores on each of the five anxiety indices we used, and between PBI scores and scores on each of the five anxiety indices.

Reliability of scores. Reliability coefficients were calculated for each of the instruments utilized, including the subscales of the PBI, the RSQ, and the OCI-R. Cronbach's alpha for the instruments ranged from .420 for the secure subscale of the RSQ to .938 for the PSWQ (see Tables 1 and 2). Due to the low reliability for several of the scales, all observed correlations were disattenuated (corrected to account for measurement error) using the following equation (Osborne, 2003):

$$r^*_{12} = \frac{r_{12}}{\sqrt{r_{11}r_{22}}}$$

The reliability coefficients are represented by r_{11} and r_{22} , while r_{12} is the observed correlation and r^*_{12} is the disattenuated correlation. Disattenuated correlations are listed in parentheses below the observed correlations in Tables 1 and 2.

Significance level and magnitude of correlations. In order to reduce the risk of a Type I Error in this study, a more stringent alpha level was adopted: only correlations that were significant at $p < .01$ were considered, while correlations significant at $p < .05$ were disregarded.

Correlation coefficients of 0 to .3 were considered to be of small magnitude, whereas correlation coefficients of .4 to .7 were considered to be of moderate magnitude, and correlation coefficients of .8 or greater were considered to be of high magnitude.

Results

Tables 1 and 2 present the correlation coefficients for the relationships between RSQ and PBI ratings and between each of these and ratings for all anxiety indexes utilized in this study. With respect to correlations between scores on the RSQ and PBI, higher scores for the RSQ's secure

attachment preference positively correlated with higher scores on the PBI's care dimension and negatively correlated with higher scores on the PBI's overprotection dimension ($p < .01$). Higher scores for the RSQ's preoccupied and fearful attachment preferences negatively correlated with higher scores on the PBI's care dimension and positively correlated with higher scores on the PBI's overprotection dimension ($p < .01$), while scores for the RSQ's dismissing attachment preference were not correlated with the PBI's care or overprotection dimension. All correlations were of small magnitude, although the disattenuated correlations for care-secure ($r = .526$) and overprotection-fearful ($r = .497$) were of moderate magnitude.

Table 1.

Means, Standard Deviations, Reliability and Correlation Coefficients (Disattenuated Correlation Coefficients in Parentheses)

| | MN | SD | RL | PBI (C) | PBI (OP) | RSQ (S) | RSQ (D) | RSQ (F) | RSQ (P) | OCI-R (Total) | PDSS-SR | PSWQ | PCL-C | SIAS |
|---------------|-------|------|------|--------------------|--------------------|---------------------|--------------------|------------------|------------------|------------------|------------------|------------------|------------------|------|
| PBI (C) | 2.55 | .51 | .892 | | | | | | | | | | | |
| PBI (OP) | .99 | .56 | .776 | -.368** (-.422) | | | | | | | | | | |
| RSQ (S) | 2.31 | .68 | .420 | .322** (.526) | -.183** (-.321) | | | | | | | | | |
| RSQ (D) | 2.20 | .64 | .566 | .045 (.063) | .019 (.029) | -.198** (-.406) | | | | | | | | |
| RSQ (F) | 1.78 | .87 | .507 | -.245** (-.364) | .312** (.497) | -.597** (-1.294) | .359** (.670) | | | | | | | |
| RSQ (P) | 1.89 | .79 | .568 | -.187** (-.263) | .242** (.364) | -.223** (-.457) | -.316** (-.557) | .278** (.518) | | | | | | |
| OCI-R (Total) | .85 | .61 | .869 | -.100 (-.114) | .106 (.129) | -.388** (-.642) | .111 (.158) | .309** (.466) | .246** (.350) | | | | | |
| PDSS-SR | .43 | .50 | .820 | -.071 (-.083) | .087 (.109) | -.274** (-.467) | .063 (.092) | .320** (.496) | .309** (.453) | .551** (.653) | | | | |
| PSWQ | 2.22 | .93 | .938 | -.095 (-.104) | .176 (.206) | -.356** (-.567) | -.005 (-.069) | .321** (.466) | .291** (.399) | .476** (.527) | .508** (.579) | | | |
| PCL-C | 1.13 | .799 | .918 | -.250** (-.276) | .186** (.220) | -.386** (-.622) | .155 (.213) | .441** (.646) | .285** (.395) | .526** (.589) | .539** (.621) | .483** (.521) | | |
| SIAS | 1.199 | .77 | .929 | -.289** (-.317) | .187** (.220) | -.503** (-.805) | -.012 (-.017) | .337** (.491) | .413** (.569) | .371** (.413) | .376** (.431) | .424** (.454) | .466** (.505) | |

Note. MN = Mean; SD = Standard Deviation; RL = Reliability; PBI = Parental Bonding Instrument; C = Care; OP = Overprotection; RSQ = Relationship Scales Questionnaire; S = Secure; D = Dismissing; F = Fearful; P = Preoccupied; OCI-R = Obsessive-Compulsive Inventory-Revised; PDSS-SR = Panic Disorder Severity Scale-Self Report; PSWQ = Penn State Worry Questionnaire; PCL-C = PTSD Checklist-Civilian Version; SIAS = Social Interaction Anxiety Scale

**Correlation is significant at $p < .01$

Table 2.*Obsessive-Compulsive Subtypes: Means, Standard Deviations, Reliability and Correlation Coefficients (Disattenuated Correlation Coefficients in Parentheses)*

| | MN | SD | RL | PBI (C) | PBI (OP) | RSQ (S) | RSQ (D) | RSQ (F) | RSQ (P) | OCI-R (Total) | PDSS-SR | PSWQ | PCL-C | SIAS |
|--------------------|------|------|-----|------------------|------------------|--------------------|------------------|------------------|------------------|-------------------|-----------------|------------------|------------------|------------------|
| OCI-R Hoarding | 1.22 | .999 | .65 | -.092 (-.121) | .136 (.191) | -.260** (-.496) | -.043 (-.071) | .172 (.299) | .293** (.481) | 537** (.713) | 288** (.394) | .353** (.451) | .355** (.459) | .357** (.458) |
| OCI-R Checking | .82 | .83 | .73 | .004 (.005) | .017 (.023) | -.278** (-.504) | .086 (.094) | .208** (.343) | .112 (.175) | 748** (.942) | 395** (.506) | .396** (.480) | .344** (.422) | .317** (.386) |
| OCI-R Ordering | 1.14 | 1.05 | .88 | .088 (.099) | -.006 (-.007) | -.231** (-.380) | .183** (.259) | .208** (.311) | .087 (.123) | 707** (.808) | 344** (.404) | .232** (.255) | .430** (.378) | .149 (.165) |
| OCI-R Neutralizing | .48 | .77 | .55 | -.125 (-.179) | .164 (.251) | -.253** (-.527) | .063 (.113) | .181 (.343) | .066 (.118) | .747** (1.081) | 346** (.516) | .282** (.393) | .359** (.506) | .159 (.223) |
| OCI-R Washing | .51 | .67 | .66 | -.051 (-.066) | .066 (.092) | -.193** (-.366) | .089 (.145) | .142 (.245) | .081 (.132) | 613** (.808) | 371** (.503) | .244** (.309) | .266** (.341) | .088 (.112) |
| OCI-R Obsessing | .93 | .96 | .79 | -.148 (-.176) | .145 (.185) | -.351** (-.608) | .075 (.112) | .329** (.519) | .290** (.432) | 741** (.892) | 501** (.621) | .410** (.475) | .444** (.520) | .367** (.427) |

Note. MN = Mean; SD = Standard Deviation; RL = Reliability; PBI = Parental Bonding Instrument; C = Care; OP = Overprotection; RSQ = Relationship Scales Questionnaire; S = Secure; D = Dismissing; F = Fearful; P = Preoccupied; OCI-R = Obsessive-Compulsive Inventory-Revised; PDSS-SR = Panic Disorder Severity Scale-Self Report; PSWQ = Penn State Worry Questionnaire; PCL-C = PTSD Checklist-Civilian Version; SIAS = Social Interaction Anxiety Scale

** Correlation is significant at $p < .01$

With respect to correlations between RSQ scores and ratings on each of the five self-report measures of anxiety (OCI-R, PDSS-SR, PSWQ, PCL-C, and SIAS), higher scores for the RSQ's secure attachment preference negatively correlated with higher scores on all five self-report measures of anxiety ($p < .01$). The disattenuated correlation between scores for the RSQ's secure attachment preference and ratings on the SIAS was of high magnitude ($r = -.805$), while the magnitudes of the disattenuated correlations for scores for the RSQ's secure attachment preference and scores on the other anxiety indices were all moderate (secure attachment–obsessive-compulsive, $r = -.642$; secure attachment–panic, $r = -.467$; secure attachment–worry, $r = -.567$; secure attachment–post-trauma, $r = -.622$). Higher scores for the RSQ's preoccupied and fearful attachment preferences positively correlated with higher scores on every type of anxiety indexed ($p < .01$), with all disattenuated correlations nearing or reaching moderate magnitude. Dismissing attachment style was not correlated with scores for any type of anxiety assessed in this study.

With respect to correlations between PBI scores and ratings on each of the five self-report measures of anxiety (OCI-R, PDSS-SR, PSWQ, PCL-C, and SIAS), neither PBI's care nor overprotection dimension correlated with obsessive-compulsive symptoms, panic, or worry. However, higher scores on the PBI care dimension negatively correlated with higher scores for post-trauma and social anxiety symptoms ($p < .01$), and higher scores on PBI's overprotection dimension positively correlated with higher scores for post-trauma and social anxiety ($p < .01$). All correlations were of small magnitude (care–post-trauma, $r = -.276$; care–social anxiety, $r = -.317$; overprotection–post-trauma, $r = .220$; overprotection–social anxiety, $r = .220$).

Discussion

This study examined the relationship between participant reports of adult attachment style, early bonding interactions with caregivers, and five different anxiety types. Results of the study supported our predictions of (a) a low to moderate relationship between adult attachment and parental bonding, (b) strong negative correlations between a secure attachment preference and all types of anxiety, (c) strong positive correlations between preoccupied and fearful attachment preferences and all types of anxiety, and (d) fewer significant correlations between early bonding memories and different anxiety types. With regard to this last prediction, only two types of anxiety (post-traumatic and social) were negatively associated with the care dimension of bonding and positively associated with the overprotection dimension; the other anxiety types were not correlated with either bonding dimension. Contrary to prediction, dismissing attachment did not correlate with any anxiety type or with either the care or overprotection dimension of parental bonding.

The positive correlation we found between secure attachment and early memories of high care and low overprotection contrasts with the absence of significant correlation in Myhr et al.'s (2004) results, but is in keeping with our assumption that adult attachment and parental bonding constructs are distinct, as well as interrelated (hence our prediction of a low to moderate relationship). Also noteworthy was the absence of significant correlation between dismissing attachment style and both the care and overprotection scales of the PBI. Since insecure attachment is considered to result from relationship experiences that do not support the optimal development of a child (Bowlby, 1988), it is interesting that only fearful and preoccupied attachment preferences were correlated with less-than-optimal caregiving (lower care scores and higher overprotection scores).

Further explanation for this result may lie in the inherent qualities of the dismissing attachment pattern. Bartholomew (1993) suggested that dismissing attachment is characterized by a denial of the need for close relationships and George, Kaplan, and Main (1996) posited that individuals with a dismissing attachment state of mind often idealize their caregivers. Participants with a dismissing attachment style may have failed to report less-than-optimal caregiving, because they did not feel close to their caregivers and were thus unaware of their caregivers' deficiencies or even dismissed unpleasant early bonding memories. In addition, the absence of significant correlation between dismissing attachment and total scores for all types of anxiety indexed in our sample suggests that individuals with a dismissing attachment style may experience a lower level of the subjectively disagreeable physiological reactivity that is often present alongside anxiety. If so, this may help explain the decreased reporting of anxiety and unpleasant early bonding memories among individuals who reported a preference for the dismissing attachment pattern.

As expected, lower correlations emerged between memories of early parental bonding (both care and overprotection) and different types of anxiety than those observed between anxiety and the secure, preoccupied, and fearful styles of adult attachment. Neither the care nor the overprotection dimension of bonding significantly correlated with total obsessive-compulsive symptoms, panic symptoms or generalized anxiety symptoms, which is partly consistent with Manicavasagar et al. (1999), who determined that PD may not be correlated with parental overprotection. Congruent with Parker's (1979) investigation, which found that people with social phobia reported decreased care and increased overprotection in their caregivers, our results revealed significant correlations between parental bonding and anxiety only with respect to post-trauma and social anxiety symptomatology, and these correlations were of low magnitude.

Given that our study revealed associations between early bonding memories and experiences of both post-trauma and social anxiety, but not the other types of anxiety indexed, it is necessary to consider a possible etiology for this finding. Since our sample consisted of undergraduate psychology students, we thought it likely that many of our participants might be young people who were away from their homes and families for the first time and could be experiencing fear about their new social environment and possibly even feel traumatized by the separation from their caregivers. Indeed, our thinking is supported by the work of Manicavasagar et al. (1999), which indicated a potential association between the perception of parental overprotection and adult symptoms of separation anxiety.

Although results were consistent with predictions of lower correlations between parental bonding and anxiety than between attachment and anxiety, our findings diverged from the work of several other researchers. For example, Silove et al. (1991), Cavedo and Parker (1994), and Turgeon et al. (2002) found significant correlations between various types of anxiety and early bonding memories. It is possible that the lack of significant correlation in our sample between early bonding memories and obsessive-compulsive, panic or generalized anxiety symptoms may indicate that people with these types of anxiety remembered fewer adverse early bonding experiences as a means of self-soothing during a difficult time (i.e., first experience living away from home). Even though these individuals did not report enough positive or negative experiences with caregivers to result in care or overprotection correlations, they may have been unconsciously attempting to calm (or neutralize) their anxiety by remembering their early experiences in a more favorable light.

Treatment Implications of Attachment Style and Early Bonding Memories

Given the findings of our study, we believe that awareness of client attachment style may enhance therapeutic outcome in the treatment of anxiety conditions. For example, anxiety in individuals with secure attachment may be due to recent trauma rather than to long-term pathology, and the counselor's role will be to help these individuals traverse their current obstacles and regain previous effectual functioning (Pistole, 1989). On the other hand, fearful clients may need extra time to form an attachment to their counselors and to use them as a "secure base" from which to explore the world in a less anxious way. Anxious individuals with a preoccupied style of attachment may have difficulty managing their emotional responses and counselors may find it helpful to respond with empathic listening, rather than becoming frustrated by emotional behavior (Pistole, 1989). Individuals with a dismissing attachment style may deny anxiety, as well as any desire or need for closeness, and the counselor may find it necessary to confront the dismissal of important relationships (including the therapeutic bond) and the denial of emotions like anxiety (Pistole, 1989).

Awareness of clients' early bonding memories may also inform therapeutic intervention when working with anxious individuals. In this study, post-trauma and social anxiety symptoms correlated with memories of early bonding, and understanding these connections may be meaningful in the treatment of anxiety. Young adults, who are potentially living away from their families of origin for the first time, may be particularly susceptible to post-trauma and social anxiety and may seek counseling for their concerns. A therapeutic understanding that these anxiety symptoms may be related to a less-than-optimal early environment, triggered by the uncertainties of being away from home, could result in treatment that is more relevant and individualized to the situation. Although medication may be appropriate for some clients contending with these circumstances, in other instances it could be especially beneficial to approach the treatment from the perspective of understanding the early family environment.

In contrast to post-trauma and social anxiety symptoms, obsessive-compulsive, panic and generalized anxiety symptoms were not correlated with early bonding memories. This may indicate that these conditions have fewer roots originating within the family, and the use of medications to control these particular anxiety symptoms may be appropriate. Despite the apparent lack of association between these three types of anxiety and early bonding memories, however, we suggest that involvement in counseling simultaneous to the use of any medication may increase the efficacy of treatment by providing a safe place for clients to discuss their concerns and consider solutions to the difficulties they encounter as a result of their anxiety conditions.

Considering the findings of this study, it is fair to assume that those counselors who bear in mind client attachment style and early bonding memories will provide a potentially more successful treatment for clients with anxiety conditions. The idea that attachment and bonding are related but distinct and separate constructs has the potential to broaden counselors' conceptualization of the manner in which relational involvement may impact anxiety and therefore contribute to enhanced treatment efficacy. Ideally, treatment of anxious clients will include an individualized approach that takes into account the manner and style in which each person forms attachments to others and with regard for the relationship between the type of anxiety being treated and memories of the early child-caregiver bond.

Limitations and Future Directions

The choice to focus our investigation on a non-clinical population is consistent with the method of several studies concerning this literature (e.g., Eng et al., 2001; Mancini et al., 2000; Meites et al., 2012; O'Connor & Elklit, 2008; Yarbrow et al., 2013). Nevertheless, the use of a non-clinical undergraduate sample may have resulted in more limited variation within anxiety states, creating a potential restriction of scores. Clearly, a clinical sample of individuals with previously diagnosed anxiety disorders is necessary to substantiate the non-clinical findings of this study. In addition, our sample's overrepresentation of women relative to men may be considered a limitation in that the associations between attachment, bonding, and anxiety could vary according to gender.

We also suggest that ongoing investigation of anxiety and attachment incorporate the use of instruments that do not require participants to discern their own degree of relational capacity. For example, the Adult Attachment Interview (George et al., 1996) provides a method for assessing attachment state of mind through unconscious processes. The dismissing attachment style, which itself merits further study, could be illuminated through the use of an instrument such as this. In addition to this concern, several of the instruments we elected to use were older measures. Although they continue to be utilized for investigatory purposes in the mental health field, their age may have bearing upon the data they yield, particularly since several of the instruments have not been re-normed or validated with current populations.

Finally, although Latino participants comprised nearly 37% of our sample, we advocate that future study of attachment, bonding and anxiety include a specific focus on multicultural populations. There may well be differences in the ways individuals from varied backgrounds experience anxiety and this should be investigated. People who have recently immigrated, for example, may experience change of this magnitude as stressful and anxiety provoking. Understanding the role of attachment and early bonding relationships in this population ultimately may provide information to support individuals, families and children who transition from their original culture into a new one.

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