BIPOLAR DISORDER IN THE FAMILY: IMPACT ON FUNCTIONING AND
ADJUSTMENT TO COLLEGE

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Bipolar disorder is a serious mental disorder, affecting anywhere from 2 to 4 percent of Americans. Though research has indicated that this disorder can be devastating for patients, less is known about how the disorder impacts family members. There is no research that has considered impacts on family members adjusting to college. The purpose of the current study was to determine the extent to which having a family member with bipolar disorder impacts adjustment to college, as well as factors that might account for worse functioning. Two groups were recruited: students with a bipolar family member \((n = 25)\) and students with no family history of the disorder \((n = 50)\). Participants were interviewed regarding their own histories of a mood disorder, as well as mood disorder histories in their immediate families. They then completed surveys assessing adjustment to college, functioning, caregiving burden, parental relationship, and attachment style. Students with a family history of bipolar disorder had significantly lower social adjustment scores, lower personal-emotional adjustment scores, and lower financial functioning scores than students without this history. Lower scores were found even after controlling for psychopathology. Avoidant attachment behaviors, anxious attachment behaviors, and aspects of the paternal relationship were identified as potential mediators. Caregiving burden was identified as a partial mediator. Implications for families and educational institutions are discussed.
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CHAPTER I

INTRODUCTION

Bipolar disorder is a serious mental illness affecting millions of Americans. A number of studies have considered the impact of this disorder on patients, but far fewer have considered how it affects the family members of those individuals. Moreover, no previous study has considered how it affects family members adjusting to college.

The present work begins with a description of the prevalence, costs, and definition of bipolar disorder. Existing literature on how bipolar disorder impacts family members is reviewed, including discussion of factors that mediate whether having a family member with bipolar disorder affects functioning. Such factors may be numerous, but the present study considered the family member’s own predisposition to mental illness, caregiving responsibilities, and issues related to parenting and attachment styles. The thesis concludes with the results and discussion from a survey comparing functioning in college students who have a family member with bipolar disorder to those with no such family history.

Definition, Prevalence, and Cost of Bipolar Disorder

Central to the defining criteria of bipolar disorder are symptoms of either mania or hypomania (American Psychiatric Association [DSM-IV-TR], 2000). The latter are episodes of intensely elevated or euphoric mood, or they can be dominated by irritability. Patients also must report other symptoms, such as inflated self-esteem, decreased need for sleep, pressured speech, flight of ideas, distractibility, increased involvement in goal-directed activity or psychomotor agitation, and excessive involvement in pleasurable activities that have a high potential for harm. Manic episodes must last a week and/or cause serious impairment, whereas hypomanic episodes require only four days and do not cause impairment. Depression is common in bipolar disorder,
but as many as one quarter to one third of individuals never report such an episode (Karkowski & Kendler, 1997; Kessler, Rubinow, Holmes, Abelson, & Zhao, 1997; Weissman & Myers, 1978).

According to the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR) there are actually four types of bipolar disorder (2000). Bipolar I disorder is characterized by at least one past episode of mania (or mixed episode involving depressive symptoms), with or without a previous depressive episode. Bipolar II disorder, in contrast, requires a previous episode of hypomania with a previous major depressive episode. Cyclothymia involves manic and depressive symptoms that do not meet full criteria for a manic, mixed, or depressive episode. Finally, bipolar disorder not otherwise specified (NOS) is diagnosed in subthreshold cases of cyclothymia, bipolar I or II disorder.

There are high rates of recurrence associated with these disorders, and residual symptoms between major episodes are common (Judd et al., 2003). This is true even for those receiving treatment (Angst & Sellaro, 2000).

Traditional estimates suggest bipolar disorders affect about 5.7 million Americans in any given year, or about 2.6% of the US population (National Institute of Mental Health, 2010). A recent large-scale epidemiological survey, the National Comorbidity Survey Replication (Kessler et al., 2005) reported a 3.9 percent lifetime prevalence of bipolar I and II disorders. Other studies, however, have found prevalence rates as high as 8% (Angst, 1998).

Bipolar disorders are associated with significant costs. Research has shown that this group of disorders results in significantly higher costs to society than most other psychiatric disorders (Bryant-Comstock, Stender, & Devercelli, 2002; Kent, Fogarty, & Yellowlees, 1995). These disorders have been found to create significant economic burden, and the annual cost of
these disorders is estimated to range from $10 billion to just under $50 billion (e.g., Begley et al., 2001; Wyatt & Henter, 1995).

The disorders also result in significant personal costs. Bipolar disorders are associated with increased risk of suicide (Isometsa, Henriksson, Aro, & Lonnqvist, 1994; Angst, Staussen, Clayton, & Angst, 2002) as well as impairment in social functioning (Coryell et al., 1993; Dion, Tohen, Anthony, & Waternaux, 1988; Ruggero, Zimmerman, Chelminski, & Young, 2006). In sum, the disorders have significant costs, not just for the people afflicted, but for society as a whole.

Impact of Bipolar Disorder on Family Members and Caregivers

While much is known about the impact of bipolar disorder on those afflicted with the condition, far less is known about the impact of the disorder on non-affected family members. A few studies have suggested that having a first degree relative with bipolar disorder may be associated with positive outcomes. Bipolar disorder has been associated with higher levels of achievement (Johnson & Carver, 2006) and first degree relatives may have positive outcomes with regard to achievement and occupational status (Coryell et al., 1989; Bagley, Jacobson, & Palmer, 1973; Woodruff et al., 1971). Other studies suggest that first degree relatives of individuals with bipolar disorder show significantly higher levels of creativity (Richards et al., 1988; Simeonova et al., 2005). It is unknown whether this link to creativity was due to genetic or environmental factors, although some studies suggest a genetic component to this interaction (McNeil, 1971).

Despite the possible positive outcomes in relatives of patients with bipolar disorder, a greater number of studies show that families of bipolar disorder experience serious negative outcomes. Existing literature has considered negative impacts among the offspring of parents
with bipolar disorder, including increased risk of psychopathology as well as attachment style and parenting. A separate literature has explored the impact on caregivers, who are often family members. Each of these lines of evidence is reviewed.

**Negative Effects Associated with Having a Family Member with Bipolar Disorder**

Research has supported the idea that family members of individuals with bipolar disorder are at greater risk for developing several mental disorders as well as other developmental problems. Offspring of individuals with bipolar disorder are at an increased risk for oppositional defiant disorder, substance use, and conduct disorders (DelBello & Geller, 2001). Attention disorders are also considered to be more prevalent among this group (Carlson & Weinstraub, 1993). Experiencing attention problems in childhood predicted the development of psychopathology later in life in this population (Carlson & Weinstraub, 1993).

Rates of mood disorders among the offspring of parents with bipolar disorder vary considerably. According to a review article focused on this group, conducted by DelBello and Geller (2001), rates of mood disorders among child and adolescent offspring of patients with bipolar disorder ranged from 5 to 67%. This is compared to offspring of parents with no psychiatric illness, which ranged from 0% to 38% (DelBello & Geller, 2001). Rates of psychiatric disorders that were not mood disorders ranged 5 to 52% in the offspring of these individuals, whereas the prevalence among healthy controls was 0 to 25% (DelBello & Geller, 2001). The increased incidence of psychopathology in the offspring of those with bipolar disorder makes it important to distinguish whether difficulty in adjustment is due solely to the transmitted risk for psychopathology or if problems in adjustment are independent of such risk.

Research supports the idea that the offspring of people with bipolar disorder also suffer significantly in psychological and psychosocial domains. For example, they are at an increased
risk of suicide compared to normal populations (Kimes-Dougan, Lee, Ronsaville, & Martinez, 2008). Mowbray and Mowbray (2006) examined the psychosocial outcomes of the adult offspring of individuals with bipolar disorder. They found that among this group, those who felt they had a stronger social network and perceived acceptance from their parents reported higher levels of self-regard and well-being. This indicates that perhaps the relationship with the parent plays a more significant role in the psychosocial outcomes of the offspring than the increased risk of psychopathology.

Offspring of parents with bipolar disorder may also be prone to higher levels of stress. Ostiguy et al (2009) investigated the experience of chronic stress and stressful life events among the adult offspring of bipolar disorder. The results of the study indicated that the offspring of a parent with bipolar disorder reported greater stress than controls in the areas of family relationships, finances, and the health of family members (Ostiguy et al., 2009). They were also found to experience more severe stressful life events compared to the general population. However, there was no difference in the frequency of stressful life events each group experienced (Ostiguy et al., 2009).

Family dynamics may be disrupted in families of bipolar disorder, leading to further possible distress. Studies have found that these families experience less cohesion and less organization than families with no history of mental illness (Chang et al., 2001; Romero et al., 2005). These families also tended to experience more conflict, and the offspring reported less independence and achievement orientation (Chang et al., 2001).

One theory for the higher rates of adaptive problems found in offspring of individuals with bipolar disorder is related to the strain of having a mentally ill parent (Schene, 1990). When the family member with the disorder is a brother or sister, similar strain has been noted (Schene,
siblings of a mentally ill child may experience this strain because the family’s attention shifts focus on to the ill sibling. Some siblings may be forced to assume a caregiver role within the family and devote more of their time in aiding their ill brother or sister (Schene, 1990).

However, few studies have considered the impact of a having a sibling with bipolar disorder.

Effects on Attachment Style Associated with Having a Family Member with Bipolar Disorder

Attachment theory describes the emotional attachment between people with particular focus on the child-parent relationship in early development (Bowlby, 1969). According to this theory as originally proposed, a child requires a secure relationship with at least one primary caregiver in order to develop normal social and emotional functioning. Without this secure attachment, it is believed that the child may suffer from social and emotional maladjustment (Bowlby, 1969). It is believed that once a child is able to establish a secure base with a caregiver, other appropriate developmental activities, such as exploration, become possible.

Studies have suggested that offspring of parents with bipolar disorder may be more likely to have insecure attachment styles. Parents that have bipolar disorder have been found to differ from non-affected caregivers in domains related to emotional expression and emotional regulation (Cichetti, Ganiban, & Barnett, 1991; Davenport, Zahn-Waxler, Adland, & Mayfield, 1984). Because these parents may be less likely to express their emotions as openly with their children and may tend to focus on teaching their children to control their feelings, the children of parents with bipolar disorder were expected to show more problems later in life (Cicchetti, Ganiban, & Barnett, 1991). For example, they faced more difficulty forming secure relationships, or attachments, to others, and also displayed issues with emotional control (Cicchetti & Aber, 1986; Zahn-Wexler, et al., 1984).
Mothers with affective disorders expressed more negative affect in their attributions to their children (Radke-Yarrow et al., 1990). The degree of negative affect in this relationship was shown to be a predictor for subsequent psychopathology and social competence among these children in later life (Radke-Yarrow et al., 1988).

However, this body of literature is inconsistent. Reichart et al. (2007) examined the perceived parental relationship with adult offspring of bipolar disorder. It was found that these offspring found their mothers to be emotionally warmer, less rejecting and more overprotective when compared to healthy population. Fathers were perceived as less protective, less emotionally warm and more rejecting compared to the normal population. Interestingly, these findings were true regardless of which parent suffered from the disorder (Reichart et al., 2007). These findings indicate that the offspring of parents with bipolar disorder can have a strong relationship with their mother, even if she is the one with the disorder.

The attachment literature related to families of bipolar disorder asserts a few key ideas. The literature suggests that children of parents with bipolar disorder may experience negative consequences later in life due to maladaptive parenting styles (Cicchetti, Ganiban, & Barnett, 1991; Cicchetti & Aber, 1986; Zahn-Waxler et al., 1984). However, findings also suggest that these offspring are capable of adapting and may still form a strong relationship with their ill parent, especially if that parent is the mother. Because of the higher rates of insecure attachment found within offspring of parents with bipolar disorder, it is important to assess whether attachment style and perceived parental relationship affect students with a family history of bipolar disorder in terms of adjustment.
Caregiving Burden Associated with Having a Family Member with Bipolar Disorder

Family members of patients with bipolar disorder are likely candidates for assuming caregiving responsibilities, especially during episodes of depression and mania. A number of studies have looked at the impact of caring for someone with bipolar disorder, although many of these studies included non-family caregivers, such as a spouse or partner (Perlick et al. 2004, 2007).

Studies have found that caring for relatives with bipolar disorder can lead to significant burden. Reinares et al. (2006) found that the highest levels of burden were associated with the patient’s behavior, how this behavior affected others, and the patient’s role dysfunction. Caregivers found the patient’s hyperactivity to be the most distressing symptom (Reinares et al., 2006). Burden has been expressed in several different domains.

With respect to financial burden, 27% of one caregiver sample reported a reduction in their salary since the onset of their relative’s illness (Dore & Romans, 2001). Forty-nine percent of this group felt that they also had to manage the patient’s finances when the patient was experiencing an episode, and 37% still felt they needed to continue to support the patient even after they were doing well (Dore & Romans, 2001). Furthermore, 29% of the caregivers in the study felt they had incurred major expenses as a result of the illness (Dore & Romans, 2001). These costs included medical expenses, such as medications and hospitalizations as well as expenses that were incurred as a result of manic episodes. Excessive spending, which is a common feature of manic episodes, can also lead to financial strain on the family and was shown to be a significant area of stress for almost half of the caregivers in the study (46%; Dore & Romans, 2001). Higher burden has also been associated with having more caregiving related financial costs (Perlick et al., 2004).
The complications surrounding this disorder also make it more difficult for caregivers to maintain social relationships, both with the patient and with others. In the Dore and Romans study (2001), 56% of the Dore and Romans sample said care-giving had a negative impact on relationships with other family and friends.

Caregiver burden has also been associated with poor health outcomes. According to Perlick et al (2007), caregivers who reported experiencing higher levels of burden suffered from a multitude of negative health outcomes, including less exercise, poorer sleep patterns, smoking more cigarettes, and being neglectful of health-promoting behaviors. Caregivers with higher burden scores more frequently scored above the cutoff for depression (according to the CES-D scale) and reported a higher frequency of chronic medical conditions. However, it is hard to say whether these medical conditions may have contributed to the higher burden levels, or if the burden exacerbated current medical conditions. Evidence has been shown that these caregivers experience poorer social, emotional, and physical functioning compared to controlled community samples (Heru et al, 2004).

Interestingly, the relationship between caregiving burden and patient functioning is reciprocal. Perlick et al. (2004) found that caregiver burden was positively correlated to their emotional over-involvement which was, in turn, negatively correlated with the patient’s medication adherence (Perlick et al., 2004). This implies that burden may indirectly affect the patient’s treatment outcomes, which in turn may cause poorer illness behavior, and further impact the family. In other words, family burden and patient illness can enter a vicious cycle, with each negatively impacting the other.
College Adjustment

Research described above documents the negative, as well as positive, impacts associated with having a family member with bipolar disorder. All previous studies, however, have looked at functioning in general; none considered the specific impact of having a family member with bipolar disorder while trying to adjust to college.

Adjustment to college is a major transition in a young adult’s life (Yazedjian, Toews & Navarro, 2009). For many it can be considered an important milestone in the process of emerging adulthood, and thus an important stage of exploration during the ages of 18 to 25 (Arnett, 2000). This adjustment involves increased demands and responsibilities including managing his or her time, developing his or her own academic schedule, establishing a new social network, and responding to new stressors and challenges (Hiester, Nordstrom & Swenson, 2009). Furthermore, students during this period are also searching for their personal identity and self-definition (Hiester, Nordstrom & Swenson, 2009).

Little is known about how having a family member with bipolar disorder affects this transition. However there are studies relating this adjustment period to family relationships in general. For example, some researchers have found there to be a relationship between college adjustment and parental attachment among students. Based on Bowlby’s attachment theory, Klasner and Pistole (2003) argued that students’ attachments to their primary caregivers form “the foundation for socioemotional development and personality functioning throughout life”. A secure attachment to one’s parents can serve as a stepping stone from which adolescents can “explore their environment and adjust to college” (Klasner & Pistole, 2003). To the degree that offspring of parents with bipolar disorder are at greater risk for insecure attachment
(Zahn-Waxler et al., 1984), then one might suspect these students to have more difficult adjustment to college.

Many studies have also shown that the student’s perceived relationship with their parents correlates to their overall psychological well-being and their adjustment to college. In one study, it was found that college students who perceived their relationship with their parents as more positive, experienced less psychological distress, felt more self-competent, and experienced a better adjustment to college (Hiester, Nordstrom & Swenson, 2009). Students who experienced a negative change in their relationship with their parents during their college experience reported more psychological distress when compared to students that had a positive change, or no change, in their parental relationship (Hiester, Nordstrom & Swenson, 2009). On average, however, this parental attachment tends to remain stable over time, and this has been found regarding college students studied from freshman to senior year (Kenny, 1990; Rice et al, 1995).

Summary of Literature

Bipolar disorder can be a devastating mental illness, affecting not only the patient but the family members of the patient. Although some positive outcomes have been associated with having a first degree relative with bipolar disorder, most of the available literature suggests that families of individuals with bipolar disorder experience substantial negative outcomes. This includes an increased risk for psychopathology, and difficulties in psychological and social domains. Family members of individuals with bipolar disorder are also more likely to experience high levels of burden. This is especially true when the family member assumes a caregiving role for the affected relative. Studies suggest that offspring of individuals with bipolar disorder may also have more difficulty forming secure attachments. This can lead to poorer psychosocial functioning in adulthood. Unfortunately, for students adjusting to college, such an attachment
style can also lead to greater difficulties. Given that the offspring of those who have bipolar disorder are at higher risk of forming insecure attachments to their ill parent, they may also be at greater risk of having difficulties adjusting to college life. The goal of the present study is not only to explore whether poorer adjustment is seen with offspring but also with siblings of those with bipolar disorder.

There are limitations to the existing literature, especially with those studies measuring burden. Burden studies tend to focus on caregivers of the patients instead of family members more generally. The studies on burden also often lack a control or comparison group, so it is difficult to know if “burden” is any more than would otherwise be reported. Finally, studies that have looked more directly at family members have tended to focus more on the risk of transmission of the disorder as opposed to adjustment concerns or general functioning outcomes.

Purpose and Hypotheses

The present study sought to explore the impact of having a family member with bipolar disorder on college adjustment as well as the extent to which this impact went above and beyond the impact associated with increased risk of psychopathology in first degree relatives. Moreover, factors identified in the literature that might mediate this effect were also tested, including negative attachment styles or relationships with parents, and caregiving responsibilities that might fall on the student. The following three hypotheses were proposed:

Hypothesis 1. Students with a family member who has bipolar disorder would perform more poorly and exhibit greater difficulties adjusting to college than students with no such psychiatric history in their immediate family. These effects would be present even after controlling for the presence of current or past affective disorders in the proband.
Hypothesis 2. The impact of having a family member with bipolar disorder on college adjustment would be partially or fully mediated by the burden of caring for that family member. In other words, much of the effect of a family history would be due to burden of care.

Hypothesis 3. Parental relationship and attachment style would also mediate the relationship between family history and adjustment. Thus the impact of having a family member with bipolar disorder on adjustment would be predicted by poor parental relationship or insecure attachment style.
CHAPTER II

METHODS

Participants

Participants for this study were 75 undergraduate college students at the University of North Texas (UNT) recruited from the psychology subject pool, which consists of students seeking course credit in introductory psychology courses or other courses which students can earn credit for taking part in research. The study was approved by UNT Institutional Review Board and all participants provided written, informed consent.

Two groups were recruited for this study. The first ($n = 25$) included students who reported having at least one family member with bipolar disorder. The family member needed to be an immediate family member with whom the participant had spent the majority of their childhood. The second group ($n = 50$) consisted of students who reported no history of a mood disorder within their family. Participants who reported a family psychiatric history other than bipolar disorder were excluded from the study.

Table 1 describes demographic characteristics by group. Within the group that had a family history of bipolar disorder, nine had a mother with bipolar disorder, nine had a father with bipolar disorder, and the remaining seven had a sibling with bipolar disorder. All participants reported having lived with the family member for at least ten years, although almost all of them had lived with the family member through their high school graduation.

Materials and Procedure

Participants met individually with an experimenter, who explained the purpose and procedures of the study and obtained consent. Those who agreed to participate were interviewed using semi-structured interviews (see below) to determine a family history of bipolar disorder or
depression, as well as to determine if they themselves suffered from a mood disorder. After completion of the interviews, participants completed the self-report measures described below.

Family History Research Diagnostic Criteria (FHRDC)

Initial identification of bipolar disorder among family members was determined through self-report. However, given high rates of misdiagnosis (Zimmerman et al., 2009), more structured screening was carried out to ensure that family members had bipolar disorder. The FHRDC (Endicott et al., 1978) has been shown to have good congruence with family member interviews for the detection of psychiatric illnesses. The interview asks participants if they observed problems related to anxiety, mood, substance use and other psychiatric history for all first-degree family members. For this study, interviewers asked participants about observed characteristics of bipolar disorder seen in their immediate family. Furthermore, participants were asked about diagnosis, treatment, and impairment related to the identified family member. Noted symptoms, treatment, and impairment were recorded.

Interviews were performed by the primary researcher and graduate research assistants in a clinical psychology program. Interview training was led by a senior clinical psychologist with intensive semi-structured interview training (Zimmerman, 2003). All interviews were taped and will eventually be reviewed by the senior clinician to ensure reliability. However, for the present study, the senior clinician reviewed approximately 1/3 of all interviews to ensure reliability, with disagreements discussed and resolved by consensus.

Structured Clinical Interview for DSM-IV (SCID)

Because of the increased prevalence of psychiatric illness among offspring of bipolar disorder, participants were given modified versions of the Structured Clinical Interview for DSM-IV (SCID) (First et al., 1995) to screen for presence of current or lifetime mood disorders.
The SCID is a widely used semi-structured clinical interview that corresponds with the *DSM-IV* diagnostic criteria for Axis I disorders. Modules related to major depressive disorder and bipolar disorder were administered. Interviews were performed and reviewed similarly to the FHRDC.

**Adjustment**

College adjustment among the participants was measured using the Student Adaptation to College Questionnaire (SACQ), developed by Baker and Siryk (1984). The SACQ is a 67 item measure that assesses overall adjustment to college life. This questionnaire measures four areas of adjustment: Academic Adjustment, Personal-Emotional Adjustment, Social Adjustment, and Attachment (to the institution). The Academic Adjustment subscale assesses the ability of the student to cope with the educational demands that accompany college life. The Personal-Emotional Adjustment subscale measures psychological and physical symptoms the participant may be experiencing. The Social Adjustment subscale assesses the interpersonal and societal demands of college life. Finally, the Attachment subscale measures the student’s satisfaction with college in general and with the particular school he/she is attending. Reliability coefficients for the SACQ ranged from .81 to .90 for the Academic Adjustment subscale, .83 to .91 for the Social Adjustment subscale, .77 to .86 for the Personal-Emotional Adjustment subscale, .85 to .91 for the Attachment subscale, and .92 to .95 for the Full Scale (Dahmus, Bernardin, & Bernardin, 1992).

The Social Adjustment Scale - Self Report (SAS-SR) was used as a secondary measure to assess social adjustment. It is determined to be a valid and reliable measure. The original instrument, created by Weissman and Bothwell (1976), includes scales related to work, marriage, interpersonal relationships, social and leisure activities. In this study, only four scales of the
original instrument were used: Student (α = .70), Leisure Activities (α = .67), Family (α = .24), and Financial (α = .70).

Burden

Participant burden levels were measured using the Zarit Burden Interview (Zarit, 1980). The Zarit Burden Interview is a self-report measure that consists of 22 items on a 5 point Likert type scale, 0 being never and 4 being nearly always. This instrument measures current burden levels. Participants are asked about the attitudes they have toward the ill family member (i.e., “Do you feel embarrassed over your relative’s behavior?”; “Do you feel strained when you are around your relative?”). It has been used in assessing the caregiver burden associated with several different patient populations, especially with older populations. Though originally developed for use with older populations suffering from dementia, it has been used with caregivers of patients with other medical problems, and with psychiatric patients. It is shown to be a valid and reliable measure. For the present study, the scale was found to have high reliability (α = .94). In this study, burden was assessed for individuals with a family member who has bipolar disorder. For comparison, individuals in the control group were asked to answer questions with respect to a close family member.

Relationship with Parent

The Parental Bonding Instrument (PBI), developed by Parker, Tupling, and Brown (1977), is a retrospective self-report measure designed to measure an adult’s perception of the early relationship with their mother and father. It contains 25-items utilizing a 4-point Likert type scale. There are separate forms examining mother and father relationship, but the same items are on each form. It is intended to be used with adults over the age of 18. It has been determined from several studies to have good reliability and validity. It has been used with several different
populations including university students. Scores are analyzed among two dimensions of the parenting relationship: caring and overprotection. On the mother form, both of the scales were found to be reliable ($\alpha = .93$ for caring and $\alpha = .87$ for overprotection). For the father form both scales were also found to be reliable ($\alpha = .95$ for caring and $\alpha = .88$ for overprotection). Higher levels of caring are associated with higher levels of satisfaction, while higher levels of overprotection are deemed to be less adaptive.

Adult Attachment

In order to measure adult attachment, the Experiences of Close Relationships Scale (ECR) was used. The ECR which was originally developed by Brennan, Clark, and Shaver (1998) measures an individual’s experiences pertaining to close romantic relationships. The ECR is a 36-item self-report measure on a 7-point Likert type scale, 1 being strongly disagree, and 7 being strongly agree. The overall scale is shown to be reliable ($\alpha = .94$). Odd numbered questions relate to the avoidance dimension of adult attachment and shown to have good reliability for this sample ($\alpha = .91$). Even numbered questions relate to anxiety dimension of attachment and this subscale also has good reliability for this sample ($\alpha = .93$). Attachment styles are calculated using the totals for both dimensions. Participants are categorized into one of four categories: Secure, Fearful, Preoccupied, or Dismissing.
CHAPTER III

RESULTS

Prior to testing hypotheses, data was screened for missing values, assumption violations and outliers. Very little data was missing on primary outcome measures. Less than 1% has individual items missing. For these rare cases, ipsative imputation was used. Afterwards, scale total missing data was examined. There was no missing data for the SACQ, Zarit Burden Interview, or PBI. The SAS-SR and ECR had some missing data (less than 10%). Given the small amount of missing data, no imputation methods were used. Assumptions for primary analyses were met unless noted.

Potential outliers were flagged by looking at individual standardized variables as well as standardized residuals for the primary analyses with unusual values (i.e., greater than two standard deviations from the mean; Tabachnik & Fidell, 2007). Six cases were flagged as potential outliers and their files were more closely inspected. One of these cases involved a participant who was significantly older than the rest of the sample. Three other cases showed evidence in their file that the interviewer expressed some uncertainty about the family diagnostic history. It was decided to remove the latter four cases from all subsequent analyses.

The remaining 75 cases were the primary sample used for this study. Table 1 shows the demographic characteristics of students with and without a family history of bipolar disorder. Groups did not significantly differ on most variables. Groups did differ, however, with respect to the extent to which students had a history of a mood disorder themselves. Only 20% of the control group had a SCID diagnosis of major depression or bipolar disorder, whereas 52% of the students with a family history of bipolar disorder had a mood disorder.

Hypothesis 1: Impact on College Adjustment
The first hypothesis was that having a family member with bipolar disorder would negatively impact adjustment to college. Table 2 reports college adjustment outcomes by group. As seen there, students who had a family member with bipolar disorder displayed poorer college adjustment scores on the SACQ Total Adjustment Scale, the SACQ Social Adjustment subscale, the SACQ Personal-Emotional Adjustment subscale, and the SAS-SR Financial Scale. Groups did not differ significantly on Academic Adjustment subscale or Attachment subscale as measured by the SACQ. They also did not differ on the SAS-SR scales measuring Student Functioning, Family Functioning, or Leisure Functioning.

Further analyses compared whether adjustment differed based on whether the family member with bipolar disorder was a parent versus a sibling. These 2 groups did not differ significantly on any of the adjustment variables.

Given that students with a family history of bipolar disorder had significantly higher rates of depression and bipolar disorder themselves, their own mental illness may confound the effects of their family history on their adjustment outcomes. To control for this possibility, analyses were rerun in multiple regression, but this time controlling first for the effects of students’ own psychiatric mood disorders. After controlling for the presence of a mood disorder, SACQ Total Adjustment Scale scores continued to significantly differ between groups, $R^2$ change = .05, $p = .04$. The effect on the Social Adjustment subscale and the Personal-Emotional Adjustment subscale were no longer significant ($R^2$ change = .04, $p = .09$ and $R^2$ change = .04, $p = .05$, respectively), although they approached significance. Finally, financial functioning as measured by the SAS-SR Financial Scale also continued to be significant after controlling for presence of a mood disorder history in students, $R^2$ change = .402, $p = .003$. 
Hypothesis 2: Role of Caregiving Burden on College Adjustment

The second hypothesis was that the impact of having a family member with bipolar disorder on college adjustment would be partially or fully mediated by caregiver burden as measured by the Zarit Burden Interview. We believed that students with a family history of bipolar disorder would report higher levels of burden and that much of the effect of a family history on adjustment would be due to this burden. As seen in Table 2, students with a family history of bipolar disorder reported significantly greater levels of current burden as measured by the Zarit Burden Interview. Their mean level of burden corresponds with ratings of “mild” to “moderate” burden, whereas students without this family history report close to no burden.

Table 3 reports the correlation between caregiving burden and adjustment outcomes. Greater levels of current burden was associated with worse adjustment outcomes on the SACQ Total Adjustment Scale and the Personal-Emotional Scale of the SACQ. Burden was also found to be associated with poorer family functioning and financial functioning, as measured by the SAS-SR.

Mediation analyses using Baron and Kenney’s criteria (Baron & Kenny, 1986) were performed to see if burden mediated the impact of family history on adjustment, as measured by the SACQ Total Adjustment Scale. In Step 1, family history predicted SACQ total adjustment, $\beta = -.334, t=-3.024, p=.003$. In Step 2, family history was a significant predictor of Zarit Burden scores, $\beta = .521, t=5.22, p<.001$. Finally, in Step 3, after controlling for current levels of burden, family history continued to significantly predict adjustment, $\beta = -.268, t=-2.07, p=.04$, although not as strongly as before, suggesting caregiving burden partially mediates the impact of family bipolar history on adjustment. Partial mediation was determined because the change in beta weights.
Hypothesis 3: Role of Parental Relationship on College Adjustment

The third hypothesis was that attachment style and/or perceived parental relationship might mediate the impact of having a family history of bipolar disorder on adjustment. Attachment was measured using the Experiences in Close Relationships Scale (ECR) which combines totals into two dimensions: Avoidance and Anxiety. Parental relationship was measured using the Parental Bonding Instrument, which produces four parenting categories (i.e., Mother Caring, Mother Overprotection, Father Caring and Father Overprotection). Thus, the two dimensions of the ECR and the four variables of the PBI were tested to see if they mediated the impact of having a family member with bipolar disorder on college adjustment, as measured by the SACQ Total Adjustment Scale.

For all of these analyses, the first step in establishing mediation was to show that family history of bipolar disorder predicts college adjustment. As before, it did ($\beta = -.334$, $t=-3.024$, $p=.003$). In Step 2, the strength at which family history predicted the six variables was determined. Family history was shown to be a significant predictor of both attachment variables, ECR Avoidance ($\beta = .269$, $t=2.35$, $p=.021$) and ECR Anxiety ($\beta = .262$, $t=2.28$, $p=.025$). Family History also significantly predicted the Father Caring scale of the PBI, $\beta = -.300$, $t=-2.64$, $p=.010$, but not father overprotection or either variable assessing perceived maternal relationship, precluding mediation for these latter three variables.

Finally, in Step 3, the impact of family history on adjustment was assessed, while controlling for the three remaining significant variables (i.e., ECR Avoidance, ECR Anxiety, and PBI Father Caring) in three separate mediation analyses. When the ECR Avoidance variable was controlled for, family history was no longer a predictor of adjustment, $\beta = -.189$, $t=-1.78$, $p=.080$, while ECR Avoidance was, $\beta = -.432$, $t=-4.069$, $p < .001$, suggesting complete mediation.
according to Baron and Kenney’s (1986) criteria. Once the ECR Anxiety variable had been controlled for ($\beta = -0.448$, $t = -4.26$, $p < .001$), family history was no longer a significant predictor of adjustment, $\beta = -0.188$, $t = -1.79$, $p = .078$, again suggesting mediation. Finally, after controlling for the effect of PBI Father Caring, $\beta = 0.328$, $t = 3.171$, $p = .002$, family history was no longer a significant predictor of adjustment, $\beta = -0.203$, $t = -1.08$, $p = .075$, suggesting full mediation for the third variable as well. In summary, ECR Avoidance, ECR Anxiety, and PBI Father Caring were all mediators of the impact of family bipolar history on college adjustment, at least in a manner consistent with Barron and Kenney’s (1986) criteria.

Students with a family history of bipolar disorder had higher rates of insecure adult attachment styles, as measured by the ECR. The majority of the students with no family history were determined to be securely attachment (40.82%) while the majority of students with a family member with bipolar disorder were categorized as having fearful attachment (50.0%). Frequencies and percentages for the attachment styles by group are seen in Table 2.
CHAPTER IV
DISCUSSION

A number of studies have considered the impact on functioning of having bipolar disorder, but far fewer have considered the impact on family members of affected individuals and this is the first to consider the impact on family members who are adjusting to college. Results from this study suggest that students who have a family history of bipolar disorder have worse adjustment and functioning in college than students with no such history. They scored significantly lower on college adjustment measures, even after controlling for their own increased levels of psychopathology.

The lower scores on the adjustment scales did not suggest that students were completely unable to adjust to college life, but rather were experiencing minor difficulties in certain domains. Although the differences in scores were significant, they still fell within the lower portion of the average scale range. These students reported lower social adjustment scores, indicating they had more difficulty participating in social activities, building relationships at college, and coping with being away from their home environment. They also had lower personal-emotional adjustment scores suggesting greater psychological distress and fewer coping resources to manage that distress. Financial functioning was also found to be an area of difficulty for students with a family history of bipolar disorder. While students with no family history tended to report always having the necessary funds to meet their needs, students with this family history reported having occasions when needs could not be financially met. The frequency of these instances ranged from minor to nearly 50% of the time. Adjustment differences were not seen for academic adjustment, school attachment, or family functioning, suggesting that the impact on adjustment was not global.
Results also suggested several factors that may be causing worse adjustment. Students with a family history of bipolar disorder experienced significantly higher levels of current burden than students with no family history. While burden was found to be negatively correlated with college adjustment scores, it was found to only be a partial mediator in the relationship between family history and adjustment, suggesting other factors were playing a role in students’ adjustment difficulties.

Among other potential candidates, certain aspects of the parental relationship and adult attachment were found to be predictors of poorer adjustment. Students with a family history, regardless of the affected family member, viewed their fathers as being less caring during the first part of their lives, and this factor was found to be a significant predictor of poorer adjustment. This suggests that this perceived lack of caring from fathers somehow influences the student’s ability to adjustment in current situations. However, maternal relationship between the groups did not differ significantly and aspects of this relationship did not predict adjustment. Exploring parental relationship and insecure parent-child attachment issues may be a key focus of therapy for these students.

In terms of adult attachment, the two attachment dimensions of the ECR, Avoidance and Anxiety, also predicted adjustment outcomes. Students with a family history had higher levels of both dimensions and a significantly higher frequency of insecure adult attachment than students without the family history. The majority of students with a family history of bipolar disorder were fearfully attached with the majority of students with no family history were securely attached. Fearfully attached individuals tend to be less trusting of relationships although seeking intimacy. This poses the question of whether the inconsistency of parenting experienced in childhood may lead to distrust. If so, perhaps it is this distrust that then is translating into the
fearful attachment style seen in adulthood. As social adjustment seems to be difficult for these students, addressing relationship difficulties might be an important treatment goal.

The findings of the present study seem to be consistent with previous literature. While no previous studies have focused on college adjustment among this population per se, available literature does suggest negative outcomes for first-degree relatives of individuals with bipolar disorder. Students with a family history of bipolar disorder had higher rates of mood disorders than those with no family history, consistent with past literature (DelBello & Geller, 2001). As the research pertaining to burden suggests (Reinares et al., 2006; Dore & Romans, 2001; Perlick et al., 2004), students with this family history experienced significantly higher levels of burden than those with no family history. Findings were also consistent with research on parental relationship and attachment. Paternal relationship seemed to be a predictor of adjustment, and students with the family history of bipolar disorder viewed fathers as less caring (Reichart et al., 2007). Maternal relationship did not differ among groups, suggesting possible greater stability. Students with this family history had higher rates of insecure attachment and attachment style was also a predictor of adjustment outcomes.

The present study has several implications for families with bipolar disorder, as well as for universities. First, this study suggests students with a family history of bipolar disorder may require more attention and resources from universities. Few programs currently exist for such students, and it is unknown if students are eligible for existing programs. Many universities offer counseling services and health services for students, but these programs may be insufficient for these students. Thus, specialized programs for students such as support groups or psychoeducational programs may be helpful. Support groups would allow for students to interact with others experiencing similar difficulties and burdens and to develop healthier strategies in
dealing with such issues. Also, these groups can help students build peer relationships. Psychoeducational programs also need to be developed in order to educate students of the unique difficulties they are likely to experience due to their family background. Possible techniques, such as how to better interact with the affected family member, and managing possible financial difficulties may decrease burden levels. Since these students tend to struggle with social adjustment, learning appropriate social skills with others could also prove to be beneficial. These students should be informed of the increased risk of developing mood disorders themselves so that they can be properly screened and receive treatment if needed.

Those students who do have a mood disorder are faced with even more challenges. On top of dealing with the burden related to having an affected family member, they are also experiencing their own symptomology. Universities may benefit from trying to make treatment options more accessible and affordable to these students. Psychoeducational groups should be aimed at educating students on how to manage the roles and responsibilities of college life while also managing mood symptoms.

The higher level of insecure attachment and previous research on disrupted patterns within these families suggests that interventions need to extend beyond the level of the university. Educating individuals with bipolar disorder and their partner about appropriate parenting techniques can foster healthier parent-child relationships. Furthermore, educating families about bipolar disorder and strategies for caring for the affected family member have been shown to be effective in reducing burden levels (Reinares et al., 2004).

Finally, programs need to be implemented to lessen the degree of financial strain these students experience. This is especially true for those students who are incurring treatment costs
because of their own diagnosis. This may include developing a program so that students who need treatment for mood disorders can have discounted treatment and lowered medication costs.

The present work was not without limitations. Due to time constraints in data collection, and poor participant turnout, sample totals were much lower than originally anticipated for this study. Because of this, power of the current study was low meaning that several non-significant effects may in fact exist although declared non-significant. Thus, impact on adjustment may be broader than what is reported here. Furthermore, this study compared students with a family history of bipolar disorder to those with no family history, finding that the former group had worse adjustment. However, one could argue that this is not an effect of having a family member with bipolar disorder specifically, but rather a family member with any mental illness. Because this study did not include a third comparison group, for example students with a family history of major depression or schizophrenia, it is hard to determine whether the observed effects are specific to families of bipolar disorder or not. Another possible limitation for this study was the way in which family history diagnosis was confirmed. The experimenter only met with the student, not the family member suspected of having bipolar disorder. To the extent such an interview is less reliable, a portion of the students with a bipolar family history may in fact have a family member with some other disorder. A further limitation of the present study was that only mood disorders were assessed, so the impact of other psychiatric disorders on outcomes in the present study is unknown. Finally, the present study assessed burden, attachment style, and parental relationship as possible factors in determining adjustment among this population. However, there are several other factors that may play a role in why these students are struggling more in adapting to college life. Assessing the student’s perceived social support or levels of self-esteem may be particularly helpful in gaining more insight into adjustment difficulties.
This study is the first of its kind and highlights difficulties faced by college students with a family history of bipolar disorder. In the treatment of mental illness, focus tends to stay with the affected individual. However, mental disorders affect entire families and bipolar disorder is no exception. The present study underscores how treatment needs to expand beyond the individual to care for all members of the family. In particular, students with a family history of bipolar history may benefit from help in adjusting to college life, especially in regard to social, emotional, and financial concerns.
### Table 1

**Demographics by Group (N = 75)**

<table>
<thead>
<tr>
<th>Variable</th>
<th>No Family History of Mood Disorder (n = 50)</th>
<th>Family History of Bipolar Disorder (n = 25)</th>
<th>t or $\chi^2$</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, $M (SD)$</td>
<td>19.38 (1.66)</td>
<td>20.17 (1.86)</td>
<td>-1.83</td>
<td>.07</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male, % (n)</td>
<td>28.6% (14)</td>
<td>33.3% (8)</td>
<td>.17</td>
<td>.44</td>
</tr>
<tr>
<td>Female, % (n)</td>
<td>71.4% (35)</td>
<td>66.7% (16)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black/African American % (n)</td>
<td>20.4% (10)</td>
<td>8.3% (2)</td>
<td>1.76</td>
<td>.42</td>
</tr>
<tr>
<td>White, % (n)</td>
<td>63.3% (31)</td>
<td>75.0% (18)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other, % (n)</td>
<td>16.3% (8)</td>
<td>16.7% (4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hispanic, % (n)</td>
<td>16.3% (8)</td>
<td>12.5% (3)</td>
<td>.18</td>
<td>.48</td>
</tr>
<tr>
<td>Not Hispanic, % (n)</td>
<td>83.7% (41)</td>
<td>87.5% (21)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Years of Education, $M (SD)$</td>
<td>13.19 (1.12)</td>
<td>14.05 (1.35)</td>
<td>-2.67</td>
<td>.62</td>
</tr>
<tr>
<td>Marital Status</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Single, % (n)</td>
<td>95.4% (44)</td>
<td>100.0% (18)</td>
<td>1.21</td>
<td>.37</td>
</tr>
<tr>
<td>Cohabitating/Married, % (n)</td>
<td>6.4% (3)</td>
<td>0.0% (0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family Income (in thousands)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-20, % (n)</td>
<td>6.8% (3)</td>
<td>5.9% (1)</td>
<td>3.93</td>
<td>.56</td>
</tr>
<tr>
<td>20-40, % (n)</td>
<td>18.2% (8)</td>
<td>41.2% (7)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>40-60, % (n)</td>
<td>22.7% (10)</td>
<td>17.6% (3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>60-80, % (n)</td>
<td>22.7% (10)</td>
<td>11.8% (2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80-100, % (n)</td>
<td>11.4% (5)</td>
<td>5.9% (1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>100 or greater, % (n)</td>
<td>18.2% (8)</td>
<td>17.6% (3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCID Diagnosis</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mood Disorder, % (n)</td>
<td>20.0% (10)</td>
<td>52.0% (13)</td>
<td>8.03**</td>
<td>&lt; .01</td>
</tr>
<tr>
<td>MDD, % (n)</td>
<td>20.0% (10)</td>
<td>52.0% (13)</td>
<td>8.03**</td>
<td>&lt; .01</td>
</tr>
<tr>
<td>Mania, % (n)</td>
<td>0.0% (0)</td>
<td>20.0% (5)</td>
<td>10.71**</td>
<td>&lt; .01</td>
</tr>
<tr>
<td>Bip NOS, % (n)</td>
<td>0.0% (0)</td>
<td>4.0% (1)</td>
<td>2.03</td>
<td>.33</td>
</tr>
</tbody>
</table>

**Note.** Percentage denominators exclude missing data.

**p < .01, *p < .05**
Table 2

Major Outcomes by Group (N = 75)

<table>
<thead>
<tr>
<th>Variable</th>
<th>No Family History of Mood Disorder (n = 50)</th>
<th>Family History of Bipolar Disorder (n = 25)</th>
<th>t or $\chi^2$</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>SACQ Total, M (SD)</td>
<td>52.30(9.01)</td>
<td>45.64 (8.96)</td>
<td>3.02**</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>SACQ Subscales M (SD)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academic</td>
<td>52.32(9.38)</td>
<td>48.92 (8.13)</td>
<td>1.54</td>
<td>.13</td>
</tr>
<tr>
<td>Social</td>
<td>51.84(11.02)</td>
<td>45.88 (8.02)</td>
<td>2.40*</td>
<td>.02</td>
</tr>
<tr>
<td>Personal-Emotional</td>
<td>49.68(9.82)</td>
<td>42.60(9.27)</td>
<td>2.99**</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>School Attachment</td>
<td>52.60 (9.83)</td>
<td>47.96 (9.72)</td>
<td>1.94</td>
<td>.06</td>
</tr>
<tr>
<td>SAS-SR M (SD)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student Functioning</td>
<td>10.78(2.93)</td>
<td>11.32 (3.26)</td>
<td>-.69</td>
<td>.49</td>
</tr>
<tr>
<td>Leisure Functioning</td>
<td>18.78 (4.40)</td>
<td>18.50 (5.15)</td>
<td>.23</td>
<td>.82</td>
</tr>
<tr>
<td>Family Functioning</td>
<td>13.98 (2.60)</td>
<td>15.00(3.31)</td>
<td>-1.35</td>
<td>.18</td>
</tr>
<tr>
<td>Financial Functioning</td>
<td>1.43 (.71)</td>
<td>2.14(1.17)</td>
<td>-3.16**</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>Zarit Burden Interview M (SD)</td>
<td>10.88(11.35)</td>
<td>27.84(16.49)</td>
<td>-4.62**</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>PBI M (SD)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother Caring</td>
<td>28.36(8.10)</td>
<td>26.08 (8.60)</td>
<td>1.13</td>
<td>.26</td>
</tr>
<tr>
<td>Mother Overprotection</td>
<td>13.22(7.63)</td>
<td>15.00 (8.89)</td>
<td>-.95</td>
<td>.35</td>
</tr>
<tr>
<td>Father Caring</td>
<td>26.16(9.18)</td>
<td>19.65(10.95)</td>
<td>2.64*</td>
<td>.01</td>
</tr>
<tr>
<td>Father Overprotection</td>
<td>9.55 (7.33)</td>
<td>13.00 (8.38)</td>
<td>-1.78</td>
<td>.08</td>
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<td>ECR</td>
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<tr>
<td>Attachment Dimensions</td>
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<td></td>
</tr>
<tr>
<td>Avoidance M (SD)</td>
<td>2.91(1.05)</td>
<td>3.52(9.99)</td>
<td>-2.35*</td>
<td>.02</td>
</tr>
<tr>
<td>Anxiety M (SD)</td>
<td>3.32 (1.24)</td>
<td>4.03(1.26)</td>
<td>-2.28*</td>
<td>.03</td>
</tr>
<tr>
<td>Attachment Categories</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secure % (n)</td>
<td>40.82 (20)</td>
<td>12.50 (3)</td>
<td>5.99*</td>
<td>.01</td>
</tr>
<tr>
<td>Fearful % (n)</td>
<td>26.53 (13)</td>
<td>50.0(12)</td>
<td>3.94*</td>
<td>.04</td>
</tr>
<tr>
<td>Preoccupied % (n)</td>
<td>20.41(10)</td>
<td>20.83(5)</td>
<td>.002</td>
<td>.60</td>
</tr>
<tr>
<td>Dismissing % (n)</td>
<td>12.24(6)</td>
<td>16.67(4)</td>
<td>.27</td>
<td>.43</td>
</tr>
</tbody>
</table>

Note. Percentage denominators exclude missing data.

**p < .01, *p < .05
Table 3
Correlations between Zarit Burden Scores and Adjustment Outcome Variables (N = 75)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Pearson Correlation</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>SACQ Total</td>
<td>-.27*</td>
<td>.02</td>
</tr>
<tr>
<td>SACQ Subscales</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academic</td>
<td>-.16</td>
<td>.18</td>
</tr>
<tr>
<td>Social</td>
<td>-.12</td>
<td>.29</td>
</tr>
<tr>
<td>Personal-Emotional</td>
<td>-.27*</td>
<td>.02</td>
</tr>
<tr>
<td>School Attachment</td>
<td>-.11</td>
<td>.36</td>
</tr>
<tr>
<td>SAS-SR</td>
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<td></td>
</tr>
<tr>
<td>Student Functioning</td>
<td>.19</td>
<td>.11</td>
</tr>
<tr>
<td>Leisure Functioning</td>
<td>.11</td>
<td>.36</td>
</tr>
<tr>
<td>Family Functioning</td>
<td>.46**</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Financial Functioning</td>
<td>.26*</td>
<td>.03</td>
</tr>
</tbody>
</table>

*p < .01,  *p < .05
REFERENCES


Zimmerman M. Integrating the assessment methods of researchers in routine clinical practice: The Rhode Island Methods to Improve Diagnostic Assessment and Services (MIDAS)