

THE USE OF AN OBSERVATIONAL MEASURE TO EXAMINE FAMILY
CHARACTERISTICS IN CHILDREN AND ADOLESCENTS
WITH EATING DISORDERS

APPROVED BY SUPERVISORY COMMITTEE

Dedicated with love to my daughters, Elizabeth and Catherine Housson

THE USE OF AN OBSERVATIONAL MEASURE TO EXAMINE FAMILY
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WITH EATING DISORDERS

by

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This study evaluated families who had a child diagnosed with an eating disorder compared to those with a child diagnosed with depression. Both groups were assessed at entry to a treatment regime: the ED group was assessed upon admission to inpatient treatment for an eating disorder, and the MDD group was assessed at admission to a research study evaluating the use of psychotropic

medication and therapy for children with MDD. The groups were compared on global family functioning as well as on specific aspects of family functioning. While the ED and MDD sample were similar in terms of ethnic breakdown, they did differ significantly in terms of age and gender, with the ED group being significantly older and having a significantly greater number of females than males.

In this study, the MDD group and the ED group did not differ significantly in terms of global family competence on an observational measure of family competence, nor did they differ in terms of conflict or closeness. The inappropriate parent-child coalition subscale distinguished ED from MDD, with the ED families scoring in the more dysfunctional range on this subscale. Age was a significant predictor of this construct, such that the older the child, the less healthy the score on this subscale. Conflict did not distinguish the groups; however, severity of illness and gender (female) were significant predictors of healthier scores on the conflict subscale for the ED group. There were no significant predictors of conflict for the MDD group.

The relationship between child report and rater observation of family functioning was assessed and found to be significant, such that there was a significant correlation between child self-report of overall family competence (Self-report Family Inventory) and rater observation (TCFES). The relationship between mother and child self-report of family functioning was also found to be

significant, such that mothers and children in this study rated their families in a similar fashion. The relationship between maternal eating disordered cognitions and family functioning was not significant, nor was the relationship between mother and child report of eating disordered cognitions.

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LIST OF ABBREVIATIONS

AN: Anorexia Nervosa

BN: Bulimia Nervosa

CMC: Children's Medical Center

ED: Eating disorder (refers to general diagnostic category of eating disorders)

EDDS: Eating Disorder Diagnostic Scale

EDI-II: Eating Disorder Inventory, Second Edition

MDD: Major Depressive Disorder

SFI: Self-Report of Family Functioning

TCFES: Timberlawn Couple and Family Evaluation Scales

CHAPTER 1

INTRODUCTION

Statement of the Problem

Approximately 22% of young women engage in eating disordered behaviors, and recent studies indicate that the development of eating disorders is influenced by many different variables (Vitousek, Watson, & Wilson, 1998). While sociocultural and media influences have been thought to contribute to restrictive eating behaviors in young females, the variability in eating pathologies have led researchers to examine a variety of other factors contributing to eating disordered behavior. More specifically, research has begun to focus more on the nature and quality of family relationships and the personality the individual brings to those relationships rather than on broader societal influences (Wade, Bulik, Neale, & Kendler, 2000). Some researchers hypothesize that while family functioning might not have a direct causal relationship on the development of an eating disorder, the overall family environment exerts a direct effect on the personality of the individual (e.g. causing low self-esteem), which then leads to the development of an eating disorder (Strober & Humphrey, 1987). This would have implications for treatment response as low self-esteem has been found to be

one of the most consistent indicators of poor treatment outcome for patients with eating disorders (Fairburn, Jones, Peveler, Hope, & O'Connor, 1993).

Over a decade of research has explored the family environment of the eating disordered patient with a primary focus on the patient's perception of family functioning (Laliberte, Boland, & Leichner, 1999). While many studies have identified certain family characteristics based on patients' perceptions and self-report measures, fewer studies have utilized clinician-rated observational measures. A study conducted by Wallin and Hansson (1999) used videotaped tasks in addition to self-report measures in a comparison of 26 Scandinavian families with a child diagnosed with anorexia nervosa and 26 non-clinical families. Their results indicate that the anorexic families were more enmeshed, conflict avoidant, and had rigid intergenerational coalitions as compared to normal controls (Wallin, 1999). Lattimore and colleagues (2000) observed 20 adolescent girls with anorexia and 14 girls with emotional and developmental disorders in high and low conflict family problem-solving tasks with their mothers. Their results indicate that anorexia dyads show more destructive communication than the comparison dyads. Within the anorexia dyads, daughters showed more destructive communication than their mothers did (Lattimore, Thompson, & Halford, 2000). While these studies have been able to identify some key characteristics of interaction styles among families with an eating disordered member, they are narrow in scope. For the most part, these studies

have not looked beyond the main characteristics previously identified (cohesiveness, high conflict, poor communication and enmeshment) in prior studies. In addition, there are a limited number of studies that have investigated family functioning observationally, and these studies assess a relatively narrow range of variables in a cross-sectional design.

CHAPTER 2

LITERATURE REVIEW

Significance and Background

Eating disorders are associated with considerable impairment in health and interpersonal adjustment, have high relapse rates (Herzog et al., 1999), and carry increased risk of mortality relative to other psychiatric disorders (W. S. Agras, 2001; Herzog et al., 2000). Many symptoms related to eating disorders can contribute to impaired health and psychological functioning even when they occur in the absence of full-syndrome eating disorders (Pearson, Goldklang, & Striegel-Moore, 2002). For example, many children with anorexia nervosa (even those who fail to meet full criteria for the disease) suffer from pubertal delay, growth retardation, and impairment of bone mineral acquisition (Bachrach, Guido, Katzman, Litt, & Marcus, 1990; Root & Longenecker, 1983). Due to the rapid rate of growth in children and the differences in their bodies, smaller weight losses are more significant for them than in adults (Robin, Gilroy, & Dennis, 1998).

A number of epidemiological studies have found that eating disorders are associated with nutritional deficiencies, which are correlated with a number of other health problems (Neumark-Sztainer, Story, Dixon, & Murray, 1998), and, in severe cases, many of these medical problems are irreversible. Growth retardation may result in short stature, delayed puberty can result in sterility or incomplete development of secondary sex characteristics, and impaired acquisition of peak bone mass during the latency and early adolescence can result in osteoporosis in adulthood.

In addition, many studies have failed to appreciate obesity as a risk factor for, or a consequence of, eating disorders. For example, binge eating is associated with obesity (de Zwaan, 2001), which is a major public health concern and recently found to be the leading cause of preventable death (surpassing cigarette smoking) in American adults. The relatively lower prevalence of eating disorders has led to a lack of research in the area; however, the impact on public health is great, and is often not appreciated fully (Pearson et al., 2002).

Prevalence

As stated, there is a general lack of research on full-syndrome eating disorders due to the relatively low base rates for these disorders. For example, estimates of lifetime eating disorders range from 0.5% in adult women for

anorexia nervosa to 3% for binge eating disorder (Steinberg, 2001). Female adolescents comprise the population group with the highest rate of a current disorder, with a mean age of onset between 16 and 18 years of age (Lewinsohn, Striegel-Moore, & Seeley, 2000). The prevalence of anorexia nervosa in 15- to 19-year-old girls has been reported to be roughly .48%, while the base rates of bulimia nervosa are less clear and estimated to be somewhere between 1 and 5% meeting criteria for full syndrome. However, anywhere between 10 and 50% of high school students have reported occasional self-induced vomiting and episodes of binge eating (Fisher et al., 1995; Robin et al., 1998). The prevalence of eating disorders in children is even lower than that of adolescents, but exact figures are unclear due to the lack of methodologically sound research in this area (Lask, 2000).

Ethnicity

There is a general perception that eating disorders affect primarily Caucasian, affluent young women. Anecdotally, the majority of cases of anorexia nervosa tend to be diagnosed in white females; however, there are few empirically based studies that assess ethnic differences in the incidence of eating disorders. In 2003, Striegel-Moore and colleagues surveyed 2,046 African-American and white women with an average age of 21, and found that African-American women were less likely to exhibit characteristics of certain eating disorder, especially anorexia

nervosa. In fact, none of the African-American women in this study met diagnostic criteria for anorexia nervosa. The researchers posit that African-American women tend to have a healthier view of their bodies and are better at accurately describing their weight. Culturally, it appears that there is less pressure for them to be thin, as the African-American women in this study reported that they preferred being moderately thin, while the Caucasian women in the study reported that they “could not be thin enough.” Therefore, it appears that even if genetically vulnerable, African-American women may have some sociocultural protective factors (Striegel-Moore, et al, 2003).

Prevalence rates of eating disorders for African-American women have been calculated and estimates range from 0.5 % to 2 % . Base rates for Hispanic women and eating disorders are less clear. Some studies have found that eating disorders in Hispanic women are consistent with those of Caucasian women, while others have cited the prevalence of eating disorders in Hispanic women as much lower, occurring in about 15 % of cases. There is less available research concerning Asian women with eating disorders, and most studies report that Asian women account for less than 1% of documented cases of eating disorders. While the majority of studies evaluating prevalence of eating disorders in different ethnicities lend support to the notion that eating disorders are primarily a “Caucasian” disorder, there are several studies that note that eating disorders are

being documented in other ethnicities with more frequency, particularly bulimia nervosa, and binge eating disorder.

ED in a Pediatric Population

The diagnostic criteria, specified in the DSM-IV, while appropriate for diagnosing eating disorders in adults, are not sensitive to the special developmental considerations in children and adolescents with eating disorders. Adhering to these criteria in an overly rigid fashion may lead to clinicians overlooking disordered eating behaviors in children (Robin et al., 1998). This is especially problematic since pediatric eating disorders have a fairly good response rate when identified and treated early (Lask, 2000).

One of the difficulties in diagnosing children with anorexia is that often these children do not present with weight loss, rather they fail to make expected weight gain during a certain period of growth. Determining expected body weight can be complicated because the clinician must account for previous height and weight percentiles, anticipated growth, and the average weight for other children/adolescents their age, sex, height, and degree of pubertal maturity (Robin et al., 1998). The menstruation criterion can also be difficult to assess due to the common absence of menstrual periods in early adolescence and its typical unpredictable, irregular course after the onset of menarche. Additionally,

prepubertal anorexia may delay the onset of puberty, and determination of when menstruation would have been expected to occur may be nearly impossible for a given patient (Robin et al., 1998).

Additionally, intense fear of weight gain and disturbance in body image can often depend on cognitive factors and typically require the use of abstract reasoning. Ability to think abstractly is most commonly developed in adolescence, but varies somewhat from individual to individual and is often related to overall intellectual functioning. Therefore, many younger children and some young adolescents may not exhibit distorted body shape perceptions. Younger children may not be able to verbalize these thoughts as well either (Robin et al., 1998). Most children who do not meet full criteria for anorexia nervosa or bulimia nervosa will typically fall in the Eating Disorder Not Otherwise Specified category.

Psychological Characteristics

Negative affect has been found to increase individual vulnerability to developing psychopathology (Leon, Keel, Klump, & Fulkerson, 1997), and is linked to eating disorders. Eating disordered individuals generally describe their mood as negative and report higher levels of subjective distress (Ball, Lee, & Brown, 1999; Leon et al., 1997). Data collected from longitudinal studies suggest

that initial depressed mood and self-perceptions are predictors of eating disorders. However, the correlation between occurrence of eating disorders and negative affect is not significant if the individual did not exhibit characteristics associated with eating disorders before onset of negative mood state (Wichstrom, 2000). When individually addressing affect and Bulimia Nervosa, different characteristics of affect emerge. In bulimic participants, self directed hostility (Friedman, Wilfley, Welch, & Kuncze, 1997), guilt, and covert guilt scores are higher than scores recorded from control groups (Allen, Moore, Kuperminc, & Bell, 1998).

Mood Disorders and Co-Morbidity

Some of the primary affective characteristics associated with anorexia nervosa are suppression of anger, negative affect, and depressed mood (Geller, Cockell, Hewitt, Goldner, & Flett, 2000). It appears that negative affect and eating disorders are often comorbid conditions; for example, depression and eating disorders are often dually diagnosed (Polivy & Herman, 1999). Some research suggests that individuals with eating disorders who are not depressed at the onset of the ED, ultimately become depressed during the course of the illness (Stice, Akutagawa, Gaggan, & Agras, 2000). It seems that anxiety and depression in ED are state dependent, meaning once the eating disorder is successfully

treated the anxiety and/or depression typically remits (Lehoux, Steiger, & Jabalpurlawa, 2000). The discerning characteristic of eating disorders is that these individuals generally lack a stable, well-organized body image, identity or self-concept (Steiger, Leung, & Houle, 1992); a characteristic that has also been linked to negative affect. A study involving bulimic participants supports that negative affect increases body dissatisfaction and body size perception (Carter, Stewart, Dunn, & Fairburn, 1997; Kulbartz-Klatt, Florin, & Pook, 1999).

Like the relationship between negative affect and eating disorders, the relationship between mood disorders and eating disorders is unclear and the data conflicting. Therefore, it is difficult to determine whether mood disorders are primary or secondary to eating disorders, and furthermore, it is possible that a common variable could determine the relationship between the two (Steiger et al., 1992).

The Family Environment, Family Characteristics and ED

A complex set of factors contributes to the development of eating disorders, one of which is the family environment (Botta & Dumlao, 2002). Many researchers have studied and posited characteristics important in families in which a child develops an eating disorder, and the family has been given a key role in developmental theories of anorexia nervosa. A number of family

characteristics associated with the disorder have been examined as well. Early research by Selvini-Palazzoli (1970) found dysfunctional family interaction patterns in patients with anorexia nervosa (Selvini-Palazzoli, 1974). Minuchin and colleagues (1978) labeled anorexic families as “psychosomatic families,” those characterized by enmeshment, rigidity, overprotection and conflict avoidance. They stated that these family dynamics put adolescents at risk for developing an eating disorder. While this early definition of the “anorectic family” has remained the gold standard in terms of how most researchers and clinicians conceptualize these families, more recent research with this population has begun to investigate different variables.

Parenting Styles

The parents of patients with eating disorders have been characterized in the literature as well as in clinical case studies as conflict avoidant, overly involved, lacking boundaries, and as having poor conflict resolution (van Furth et al., 1996). Eating disorder patients tend to describe parental control as coercive and perceive family communication, parental caring, and parental expectations as low (Haudek, Rorty, & Henker, 1999; Neumark-Sztainer et al., 1998). There is some variability in terms of family characteristics and diagnostic groups in ED. Specifically, bulimia nervosa patients report greater parental intrusiveness

(maternal invasion of privacy), jealousy, competition, and parental seductiveness than children with out bulimia (Rorty, Yager, Rossotto, & Buckwalter, 2000). Furthermore, certain characteristics among parents and, more specifically, mothers and daughters are associated with eating disorders. Parental figures of families with eating disorders are either negating of the eating disordered child's needs (Minuchin et al. 1978) or overly concerned with parenting (Shoebridge & Gowers, 2000).

Waller and Hartley (1994) developed the Parental Style Questionnaire, and while clinically validating their instrument, found certain distinguishing factors in both bulimics and anorexics concerning their perceptions of parental styles(Waller, and Hartley P., 1994). For example, they found that bulimic patients endorsed inadequate maternal rules regarding goals for behavior and perceived parental disapproval as non-contingent, as no contingency is expressed to them. The anorexic patients sampled indicated that maternal standards were too high to be achievable, and that parental disapproval is therefore inevitable. In both cases, perceived failure is the probable outcome, leading to dissatisfaction and poor self-esteem, two variables previously associated with the development of an eating disorder (Slade, 1986).

A separate study used the Parental Bonding Instrument (PBI) to examine anorexic and bulimic women's perception of the care and protection that they received in childhood and adolescence. Overall, their findings support previous

hypotheses that over protection and lower levels of parental warmth are associated with eating disorders. Although maternal over protection was higher in the ED group, it did not significantly differentiate the clinical and comparison groups (242 university women with no reported history of ED). In this particular study, paternal over protection was significant, providing some evidence against the traditional picture of fathers of bulimic and anorexic patients as ineffectual (Calam R, 1990). Overprotection has consistently been described as an important construct in the development of eating disorders as it jeopardizes the child's ability to develop autonomy, a sense of self-efficacy, and independence (Gowers & North, 1999).

Conflict and Communication

Difficulties with communication in family systems are consistently observed in the clinical presentation of anorexia nervosa; however, well controlled, empirical studies have yet to provide evidence for a causal role for such difficulties (Lattimore et al., 2000). Family-systems experts support the view that families of anorexia nervosa sufferers are characterized by an interaction style that is enmeshed, overprotective, rigid (especially when confronted with a stressful change within the system), and conflict avoidant (Minuchin, 1978). A small number of studies using observational methods have

supported this, but only partially (Gillberg, Rastam, & Gillberg, 1994; Humphrey, 1989; Rastam & Gillberg, 1991).

In one observational study, several interaction types were identified for families with a member suffering from anorexia nervosa. For example, they found the families were characterized by an overall style that was ‘enmeshed,’ ‘uncohesive,’ ‘pseudo-happy,’ and ‘conflicted’ (E. Kog, and Vandereycken, W., 1989). Studies that simply focus on levels of expressed emotion (EE) have found that families with a sufferer of anorexia nervosa are, for the most part, conflict avoidant, but have not supported the notion of these families as enmeshed or overprotective (Dare, Le Grange, Eisler, & Rutherford, 1994; Hodes, Dare, Dodge, & Eisler, 1999; Szmulker, Eisler, Russell, & Dare, 1985). One major shortcoming of the aforementioned studies is they have not included comparison with non-anorexic groups. This raises the question of whether dysfunctional interaction patterns in families of anorexics are qualitatively and functionally distinct from those occurring in other disorders (Strober & Humphrey, 1987).

The majority of observational studies conducted with anorectic families suggest that these families have difficulty dealing with problems and resolving associated conflict. One of the shortcomings of these studies is that the conclusion that these families have difficulty resolving problems is based on the behavior of the parents only (Lattimore et al., 2000). Reported discrepancies between parent and adolescent family members’ perceptions of problem solving

could imply that parents and adolescents behave differently in these situations (Gowers & North, 1999). In an effort to provide a more detailed description of characteristics of problematic communication between mothers and their daughters, Lattimore and colleagues (2000) observed 20 girls with anorexia nervosa in high and low conflict family problem solving tasks with their mothers. This group was then compared to a group of adolescent girls with various emotional and developmental disorders (n=14) participating in the same task. They found that the anorexia dyads showed more frequent disagreement, blame, mindreading and negative affect, and less positive affect than comparison dyads. The mother-daughter pairs in the anorexia group did not differ significantly from the comparison group in the extent to which they reciprocated each other's destructive communication; however, the comparison dyads reciprocated constructive communication to a greater extent than mother-daughter pairs in the anorexia nervosa group. The extent of destructive and constructive communication was evenly balanced in the comparison group, while in the anorexia group, mothers and daughters reciprocated each other's destructive communication to a greater extent than their constructive communication. Furthermore, the adolescents showed more frequent destructive communication while their mothers exhibited more constructive communication such as supportive comments or requests for clarification (Lattimore et al., 2000).

Enmeshment

Multiple theorists have given the family system a key role in the development of anorexia nervosa, and they have identified a number of family variables that are associated with this disorder. One important variable throughout the literature in the development and maintenance of anorexia nervosa is boundary dissolution (Minuchin, 1978). Boundary dissolution can create enmeshment, in which family members lack differentiation and individuation (Rowa, 2001). Clinical case reports in the eating disorders literature support the presence of boundary problems within families of anorectics (Evans, 1995; Heron & Leheup, 1984; Verheij, 1986), and several empirically-based studies have also lent support for the existence of boundary problems in anorectic families (E. Kog, and Vandereycken, W., 1989; E. Kog, Vertommen, & Vandereycken, 1987). Additionally, women with anorexia nervosa have been shown to be less individuated than control women (Smolak & Levine, 1993) and to be more deferential to their parents (Humphrey, 1987, 1989). Furthermore, parents of anorexics have been shown to manage their daughters more so than control parents (Humphrey, 1989). In addition, low levels of familial independence and eating disordered thoughts and behaviors have been reported (Felker & Stivers, 1994; Frederick & Morrison, 1998).

Boundary problems, while implicated in the development and maintenance of anorexia nervosa, do not seem to be specific to this disorder. They have been linked with a number of other child adjustment problems, including depression, anxiety and identity disturbances (Fish, 1991; Fullinwider-Bush & Jacobvitz, 1993). Thus, it appears that boundary problems are not specific to eating disorders, rather they increase the child's vulnerability to developing some form of psychopathology, one being an eating disorder (Rowa, 2001).

Rowa and colleagues (2001) examined parent-child boundary problems in a sample of 30 women with anorexia nervosa recruited from an eating disorders program. They compared this sample to 65 control women recruited from an undergraduate psychology course. The researchers compared the two groups' reports on intergenerational boundary problems using the Parent-Child Boundaries Scale (Kerig, 1996). They found that women with anorexia nervosa generally reported more boundary problems with mothers and fathers than did the comparison group of non-eating disordered women, which supports previous observational data examining boundary dissolution (E. Kog, and Vandereycken, W., 1989; E. Kog et al., 1987). This study concluded that while the anorectic families demonstrated more problems regarding intergenerational boundary dissolution, they also concluded that boundary problems are not unique to anorexia. The thought is that boundary problems within the family contribute to

negative or depressive affect, which often accompanies eating disorders (Rowa, 2001).

Expressed Emotion

Expressed emotion (EE) has been studied extensively in psychiatric literature to determine the “affective climate” of the family, and has subsequently been implicated in the development of a number of psychiatric illnesses (Moulds et al., 2000). Initially, EE studies focused primarily on families who had a member with schizophrenia in an attempt to characterize the schizophrenogenic family. In the mid-1980’s some research regarding the role of EE in eating disorders began to emerge (Szmukler et al., 1985).

In their 1996 paper, van Furth and colleagues examined the association between EE and the course of illness in an eating disordered population. They looked at the predictive utility of EE in the treatment outcomes of patients with eating disorders. Their findings indicated that the mother’s level of critical comments were the best predictor of treatment outcome compared to variables such as diagnosis, duration of illness, body weight, body mass index, age of onset, gender, premorbid weight, and age (van Furth et al., 1996).

Moulds and colleagues (2000) examined levels of perceived expressed emotion in siblings and parents of patients hospitalized with anorexia nervosa.

They found that levels of expressed emotion did not significantly differ for siblings, mothers and fathers. Perception of EE did not predict rate of weight gain (as measured by change in BMI) following six weeks of inpatient treatment. The authors note the importance of considering that the EE ratings utilized in this study were made by the anorexic patient. Thus, the patient's own perception was used as the predictor of outcome in this study, and the patients completed these ratings within the first four days of their admission to the hospital. The patients reported experiencing various emotional responses to their parents having them hospitalized which could have influenced the results and caused the patients to experience more negative feelings towards their parents. While perception of EE did not predict treatment outcome in terms of refeeding in the initial stages, the findings did demonstrate that higher levels of perceived EE decreased the likelihood of improvement in psychological functioning as measured by the Interpersonal Distrust and Perfectionism scales of the EDI-2. Furthermore, the results suggest that familial relationships (as perceived by members of the family) are impacting upon these specific aspects of family functioning (Moulds et al., 2000).

Maternal Factors

Aside from focusing on the family environment and family interactions, some studies have focused on Axis I pathology in parents and its relationship to children with eating disorders (Lilenfeld et al., 1998; Strober, Morrell, Burroughs, Salkin, & Jacobs, 1985). Many authors have focused on the relevance of the mother-daughter relationship in the genesis of eating disorders. Identification with the same-sex parent is essential in the development of the child's identity, and Bruch found early alterations in mother-daughter relationships in women with anorexia nervosa (Bruch, 1982). Hahn-Smith and colleagues (2001) found that healthy mother-daughter identification positively correlated with good levels of self-esteem and negatively correlated with disordered eating behaviors in children (Hahn-Smith & Smith, 2001). A separate study found that the child's perception of poor maternal care during childhood correlates with a higher frequency of eating disorders: the less caring the mother, the higher the scores on the Eating Disorder Examination and the Eating Disorder Inventory in both Caucasian and Asian American women (Haudek et al., 1999). The majority of the clinical literature focuses on specific personality types of parents with anorexia nervosa (Bruch, 1982; Minuchin, 1978; Selvini-Palazzoli, 1974), rather than the personality traits of the parents of children who have an eating disorder.

Maternal Eating Disorders

Research has shown that mothers with eating disorders have a negative influence on their children's attitudes and behaviors, and that they tend to feed their children irregularly and use food for nonnutritive purposes. Research has shown that mothers with eating disorders often start expressing concern about their daughters' weight at age two. By the age of five, these children generally exhibit greater negative affect than do the children whose mothers do not have an eating disorder (S. Agras, Hammer, & McNicholas, 1999).

A mother's dieting behavior, restriction of caloric intake, and expression of shape and weight concerns appears to have a negative impact on her daughter's eating habits and behaviors (Ogden & Steward, 2000). Mothers who were found to use control strategies over their daughter's food have higher eating restriction scores on eating disorder measures (Edmunds & Hill, 1999). A group of 12 year old dieting girls (20% of a sample of 200 school children) reported that their parents recommended against eating between meals and eating heavily (especially sweets and high-caloric foods), and exerted greater control over their eating habits in general when compared to the parents of their non-dieting counterparts (Garcia de Amusquibar, 2003). In addition, mothers who have eating disorders appear to be more critical of their daughters, particularly where appearance and weight are concerned. This may lead to an overall increase in negative commentary, teasing, and excessive comments about a child's weight and shape (Schwartz, Phares, Tantleff-Dunn, & Thompson, 1999). As a result, the family climate may then

foster dieting or excessive exercise that may become a risk factor leading to the development of an eating disorder (Garcia de Amusquibar, 2003).

Psychological Characteristics of Mothers who have a Child with an Eating Disorder

Mothers of girls with eating disorders generally appear to influence their daughter's eating pathology, and maternal critical commentary appears to be more powerful than modeling in terms of its influence on weight and shape concerns, (Ogden & Steward, 2000; Smolak, Levine, & Schermer, 1999) and fairly predictive of the daughter's developing an eating disorder (van Furth et al., 1996). Mothers of eating disordered families tend to imply that their daughters need to lose weight, and describe their daughters as less attractive in comparison to the perspective of other mothers and the child's peers. Overall it seems that mothers of families with eating disorders tend to be dissatisfied with the general functioning of their families.

Perfectionism has been frequently noted as a key clinical feature of restricting anorexia nervosa (Janet, 1903; King, 1963) and the trait appears to remain stable even after weight restoration and remission of anorexia symptoms (Bastiani, Rao, Weltzin, & Kaye, 1995). In terms of clinical features of mothers who have a child with anorexia nervosa, perfectionism appears to be a salient

feature in this group as well. Lilenfeld and colleagues (2000) reported elevated rates of perfectionism in the first degree relatives of bulimic and anorexic children (Lilenfeld et al., 2000). Woodside and colleagues (2003) found that both mothers and fathers displayed perfectionistic tendencies when compared to parents who did not have a child with an eating disorder. More specifically, the salient differences between mothers of individuals with AN and female controls were greater perfectionism and higher levels of some aspects of eating-disordered type attitudes and behaviors. For example, the mothers of children with AN had elevated scores on the EDI-2 Drive for Thinness, Ineffectiveness, and Interoceptive Awareness subscales. A hypothesis for this difference given by these authors is that the scores are either reflective of the mother's own eating pathology, or that they have a heightened awareness of weight and shape issues due to having a child with an eating disorder. They also noted that the Ineffectiveness scale could be elevated due to the emergence of a sense of ineffectiveness secondary to having a child with AN (Woodside et al., 2002). Strober and colleagues (2000) also suggest the possibility of elevated scores on eating disorder measures in mothers of children with AN could be the result of an aggregation of subthreshold pathology in parents (Strober, Freeman, Lampert, Diamond, & Kaye, 2000). Also, an excess of childhood perfectionism and negative self-evaluation has been noted in individuals with AN. These

experiences in childhood could certainly be affected by the personality of the parents of the child with AN (Fairburn, Cooper, Doll, & Welch, 1999).

Assessing Family Functioning

Following the lead of numerous clinicians and researchers in the field of family psychology, mental health professionals no longer conceptualize psychiatric disturbance as exclusive to the individual, but now account for the importance of the family's influence on the development of the individual and the development of psychopathology within that individual. Broadening the focus of clinical attention from the individual to the individual within the family has presented some difficulties for mental health professionals. For example, many clinicians have limited training in family systems concepts, and, generally speaking, many clinicians are not taught how to evaluate family functioning in order to better understand an individual family member's psychiatric difficulties within the context of the family, or to design a treatment approach that reflects this understanding. Furthermore, in comparison to measures designed to evaluate an individual's strengths and weaknesses, (e.g., MMPI-2, Rorschach, MCMI-III, etc.) measures of family functioning have not been as widely utilized (Housson, 1996).

Because clinicians now widely agree that psychopathology must be understood within the context of the family, assessing family functioning is an important aspect of studying psychiatric difficulties and in designing treatment approaches that recognize this important aspect of psychiatric disturbance. There are several issues related to assessing family functioning that are important in considering. First, it is important to understand normal or healthy family functioning before one can identify abnormal family functioning (Smolak et al., 1999). Another important aspect necessary in understanding family functioning is the diversity of perspectives each unique member of the family brings to the equation (Steinberg, 2001). In a meta-analysis, Achenbach, McConaughy, and Howell (1987) found that ratings of children and adolescent's emotional-behavioral problems depended on which informants were used to assess the problems (Achenbach, McConaughy, & Howell, 1987). Similarly, Cantwell, Lewinsohn, Rhode and Seeley (1997) found divergent perspectives in the use of diagnostic interviews for eating disorders. In their study, they found that adolescent-parent reports of anorexia nervosa were highly related (kappa of .75), whereas adolescent-parent reports of bulimia nervosa had a poorer correspondence (kappa of .53) (Cantwell, Lewinsohn, Rohde, & Seeley, 1997).

Self-report versus Observational Measures of Family Functioning

There are a number of observational measures of family functioning; however, most are impractical for the clinician, particularly when rapid assessment and treatment are primary. In addition, many observational measures of family functioning employ a microanalytic analysis of family interaction, which involves counting the occurrence and frequency of specific behaviors. Once these are tallied, the clinician or researcher generates a behavioral profile of the family. For example, Carlson and Grotevant (1987) noted this problem with several observational measures of family functioning (e.g., Gottman, 1979; Bales, 1950), and added that not only are they time consuming, but they are also quite labor intensive, making them impractical in clinical settings. Microanalytic techniques provide useful information about the functioning of couples and families, but they are more appropriate for use in research settings where greater allowances for time and labor can be made (Carlson, 1987; Housson, 1996).

Given some of the above noted problems with observational means of evaluating family functioning, both clinicians and researchers have used self-report inventories in order to learn about family functioning (e.g., Olson, 1982; Moos, 1974; Hampson, 1989). These measures have been particularly attractive to clinicians due to the low cost of most paper-and-pencil inventories of family functioning as well as the ease of administration and scoring. Markman and Notarius (1987) cite that self-report instruments designed to assess family functioning appear to be most useful in measuring perceptual variables such as

how individuals feel about and view themselves in intimate relationships. They note that measures of marital and family satisfaction can be reliably and validly measured by self report. One downside of self report measures involves their limited ability in delineating important process variables such as family power, problem-solving, and conflict. This is borne out by the finding that family members' self-reports of family life often correlate poorly with observational measures of the family by independent observers (Markman, 1987; Tasto, 1986).

Several other techniques, including structured and unstructured clinical interviews, projective tests, and art techniques have been employed by clinicians and researchers to evaluate both families and couples (Housson, 1996). While all of these data gathering techniques can supplement a clinician's or researcher's understanding of a family, clinical and research findings (Huston, 1982; I. W. Miller et al., 1994) suggest that behavioral rating scales may be most useful in helping a researcher or clinician understand the functioning of a couple or a family (Carlson, 1987).

Rating scales of marital and family behavior have several advantages over other instruments used to study the family. Rating scales allow the clinician or researcher to capture information regarding the process and content of interpersonal relationships within the family while it happens in the "here and now," rather than relying on reports of historical events. Carlson and Grotevant (1987) note that rating scales are useful in "...[describing] the global relational

structure or characteristics of the whole family...” Clinicians and researchers are able to obtain an objective summary of a family’s interactional style that generates information that the family cannot communicate through a self-report inventory due to family members not always being accurate reporters of interactional dynamics within their family. Clinicians cannot access interactional data and non-verbal cues when relying solely on self-report measures of family functioning. When compared to microanalytic observational measures of families, rating scales do not carry as high a cost in terms of time to analyze the data and generate a family profile that is clinically useful. Furthermore, the information obtained through rating scales can facilitate communications between professionals, guide treatment planning, and serve as a useful measure in outcome studies (Carlson, 1987).

While most rating scales of marital and family functioning employ a methodology whereby raters rate different family variables on 5-point, 7-point, or 9-point likert-type scales, other methodologies have been developed to assess couple and family functioning. For example, Wampler and her colleagues developed a Q-sort method to rate both marital and family functioning (Wampler, Halverson, Moore, & Walters, 1989). The Q-sort method provides a global description of marital and family functioning and reduces rating bias by requiring raters to describe the couple or family by sorting a set of behavioral descriptors into a predetermined distribution that ranges from least like the couple or family

to most like the couple or family. The placement of each behavioral descriptor in the distribution is determined by how characteristic or salient that particular behavior is observed to be during the couple or family interaction. Wampler and colleagues demonstrated that the Q-sort methodology is a reliable and valid means of obtaining observational measures of marital and family functioning in nondistressed families with a young child. Furthermore, raters can rate live or videotaped interactions in either a clinic or research setting (Housson, 1996; Wampler et al., 1989).

Like the other instruments listed above, rating scales used to assess marital and family functioning have disadvantages that limit their usefulness. Rating scales rely primarily on “outsider” perspectives of the family and often do not take into account the subjective reality of what it is like to be a member in the family that is being studied. Rating scales allow a clinician to make qualitative judgments of family behavior, in addition to estimates of the frequencies or quantities of occurrences of specific behaviors. However, as a clinician moves from microanalytic techniques whereby behavioral frequencies are recorded, to rating scales where more qualitative judgments are made by the rater, the less likely it is that different raters will derive similar assessments of the family. So, rating scales are more clinically useful than microanalytic techniques since scores are derived from summary judgments of the family but the disadvantage is that reliability is compromised by not scoring behavioral frequencies (Brock, 1986).

In sum, there are a number of useful self-report and observational measures used to understand family functioning and dyadic relationships within the family. These, in turn, can be used to assess familial influences on body image and eating disturbances. A strength of self-report questionnaires of family functioning is that they are easy to administer and score, and they allow for different family members to give their opinions on their experiences in the family. These measures are limited, however, in that they rely solely on self-report of the family member, which may not be accurately reported. A more complex means of evaluating family functioning is to conduct direct observations with all family members present using a structural analysis of social behavior to analyze family's functioning. While this method is time consuming and arduous, it typically allows for a much more comprehensive understanding of the complexity of family dynamics (Steinberg, 2001).

Parent Self-Report versus Child Self-Report

Clinicians treating individuals focus on the patient's perception of his or her family of origin, and rely on the individual's report of family history and dynamics. While this is appropriate in individual therapy, clinicians treating families are confronted with the fact that each member of the same family may have a different vision of the family's functioning (Guttman, 2002). Oftentimes

family members' perspectives of their families are reflective of the individual's developmental stage. For example, parents may have a tendency to overemphasize similarities between themselves and their children to depict a family that is very united, whereas adolescents, who are concerned with autonomy, tend to overemphasize the differences (Guttman, 2002). The extent of agreement or of disagreement between family members also depends heavily on the variables studied. Typically, there is more agreement about objective family characteristics, while there is more divergence concerning variables that reflect their self-image or family characteristics that have particular personal importance for them. Of all the differences in perceptions of family functioning, those between adolescents and their parents have been most intensively investigated and the correlations between their scores are typically low (Hampson, 1989; Henggeler, Edwards, & Borduin, 1987). Recently, the usefulness of evaluating the discrepancy between distressed mothers and their children about the child's level of functioning is important in order to better understand the child's development (Guttman, 2002).

Using the SFI, Guttman and colleagues (2002) compared different family members' perceptions of family functioning using three clinical groups: borderline personality disorder, anorexia nervosa, and those with no clinical history. The borderline group consisted of 21 women, the anorexia group consisted of 23 women, and the control group consisted of 25 women. The

women with anorexia did not differ significantly from the normal controls in terms of their perceptions of family functioning; however, both groups of women reported less family health than their parents did. The women with borderline personality disorder reported less family competence than did the other two groups, and the family members disagreed with each other concerning various aspects of family functioning (Guttman, 2002).

Family-report vs. Clinician/Observer-report of Family Functioning

There is a tendency to believe that the perceptions of an outside observer are more objective and neutral and therefore more reliable than those of any family member. There are studies that indicate that observers' perceptions are usually more similar to those of the adolescent of the family (Feldman, 1989; Noller, 1988). A study comprised of 36 subjects with anorexia nervosa and their mothers were given a self-report inventory of family functioning (the Family Assessment Device) as well as evaluated via an observational measure of family functioning (The McMaster's Structured Interview of Family Functioning). Their results indicated that clinician's and patient's both rated family functioning as lower (more dysfunctional) than the parents did. Clinicians, however, were no more critical than the patients were, and the clinicians' scores were positively correlated with the adolescents' scores. The research subjects and clinicians both

described significant difficulties in family functioning in a number of areas, and the level of dysfunction reported in this study is higher than in previous studies (Gowers & North, 1999; Stevenson-Hinde & Akister, 1995), and reflects a view not shared by the parents. This study also evaluated the relationship of between severity of anorexia nervosa and family functioning. They expected to find an association between the severity of the child's illness and difficulties with family functioning, this, however, was not the case. They found that while overall agreement between family members concerning family functioning was poor, the family members in this study were actually less critical of family functioning when the clinical condition was more severe (Gowers & North, 1999). A limitation of this study is that when assessing perceptions of family functioning and comparing them to clinical observations of family functioning, it is difficult to compare whether the two instruments are actually measuring the same phenomena. In this study, the Family Assessment Device (FAD) and the McMaster's Structured Interview of Family Functioning (McSIFF) were used, and they are based on the same theoretical model and many items from the FAD are included in the structured interview. It is still difficult to compare whether to two are really measuring the same thing given the confounding issue of a change in rater as well as a change in form of administration (Gowers & North, 1999).

Other studies have found that adolescents are more critical of family functioning, suggesting that this attribute may not be specific to adolescents with

anorexia nervosa (North, Gowers, & Byram, 1995). At the same time, Waller and colleagues (1990b) suggested that adolescents with anorexia nervosa may be more insightful than their parents are, and as a result, they might be more aware of the family's difficulties (G. Waller, Slade, P, & Callam, R., 1990b).

However, one study found that adolescents with anorexia nervosa and their parents both rated family functioning as normal, whereas interview ratings using the McMaster Structured Interview of Family Functioning suggested the families were dysfunctional. A possible reason for this suggested by the researchers is that the scale may not be appropriate for use with British families (North et al., 1995). Other studies have cited similar findings and have hypothesized that these correlations between anorexic children and their parents' reports of family functioning reflect the strong cohesion and enmeshment between members of families that have a child or adolescent diagnosed with anorexia nervosa (Guttman, 2002).

MDD and Family Functioning

Major Depressive Disorder (MDD) is a serious and often pervasive psychiatric disorder that many times onsets in adolescence or childhood. The prevalence rate of MDD in children ranges from 0.4% to 2.5% and from 0.4% to 8.3% in adolescents (Birmaher et al., 1996). Consistent with the idea that

depression exists in an interpersonal context, more attention has been given to family relationships and family interactional processes in the course of depression in children and adolescents (Gotlib, 1992). Initial investigations into this relationship suggest that family functioning is disrupted in youth who present with elevated levels of depressed affect (Kaslow, 1994). Specifically, depression in children appears to be associated with family environments characterized by a lack of support and facilitative interactions, and by elevated levels of conflict, criticism, and angry interactions (Sheeber & Sorensen, 1998). In observational studies of families with preadolescent children, parents of depressed children displayed less positive, rewarding and supportive behaviors than did parents in comparison families (Cole & Rehm, 1986; Kobak, 1991).

Sheeber and Sorensen (1998) conducted a multimethod assessment comparing the family environments of depressed adolescents and non-distressed adolescents. They found that adolescent depression tended to occur in the context of distressed mother-child relationships. The data from multiple sources (including both self-report and observational methods) indicate that depressed adolescents experience less supportive and nurturing family environments than do their non-depressed counterparts. Consistent with previous studies, the adolescents in this study reported that their families were less cohesive, and that their parents were less accepting of them. Between group differences were found in the observed interactions, with mothers and adolescents in the depressed group

displaying less facilitative behavior, and the adolescents in the group displaying less problem-solving behavior. This study confirms that deficits in family support reflect behavioral patterns of families with a depressed adolescent rather than being attributable to depressive biases in adolescents' self-reports (Sheeber & Sorensen, 1998).

Depressive symptomatology in children seems to be related to the quality of their relationships with their family. The most widely reported finding regarding this relationship is that depression in adolescents is inversely related to the level of support, attachment, and approval adolescents experience in the family environment (Sheeber, Hops, Alpert, Davis, & Andrews, 1997). Sheeber and colleagues (1997) found that less supportive and more conflictual family environments were associated with greater depressive symptomatology both concurrently and prospectively over a one year period. This study provides additional evidence that family relationships are relevant to the onset and maintenance of depression in adolescents. These results indicated that family relationships also have a prospective relationship with depressive symptomatology, which has implications in a clinical arena. Interventions aimed at reducing family members' conflictual behaviors and increasing their supportive behaviors may be effective in reducing some depressive symptomatology in children and adolescents (Sheeber et al., 1997).

CHAPTER III

AIMS AND HYPOTHESES

The lack of research pertaining to family functioning and eating disorders necessitates further study on identifiable characteristics of families where a child or adolescent is being treated for an eating disorder. The primary aim of this study was to examine the relationship between family functioning and eating disorders. More specifically, I were interested in gaining a clearer understanding of family factors unique to eating disorders, accomplished by comparing families with a child diagnosed with an eating disorder to those with a child with major depressive disorder. Considering that most studies have used self-report measures to evaluate family functioning, this study also examined the relationship between child- and parent-reports of family functioning and clinician's ratings using an observational measure of family functioning. A secondary aim of the study was to examine the relationship of maternal psychopathology to family functioning. Additionally the relationship between maternal eating disordered cognitions and eating disordered cognitions in children was also analyzed.

The results of this study should offer valuable information to the clinicians treating this population in regard to the critical role that they play in the overall

well being of their patients as well as that of the parents of their patients. Using an observational instrument to evaluate family functioning will allow for more specific information regarding interaction patterns in ED families. This information can be utilized to develop treatment protocols geared towards treating families who have a child with an ED.

Questions and Hypotheses:

The following questions and hypotheses were examined in this study:

Question One

Do families who have a child diagnosed with major depressive disorder demonstrate less competence on an observational measure of family functioning than families who have a child diagnosed with an eating disorder?

Hypothesis One:

By way of an observational measure of family functioning, the MDD families will demonstrate less global competence than ED families, measured by the global competence scale on the TCFES.

Hypothesis Two:

ED families will exhibit greater levels of closeness and inappropriate parent-child coalition than the MDD families, as measured by the TCFES.

Hypothesis Three:

MDD families will exhibit greater levels of conflict on an observational measure of family functioning than ED families.

Question Two:

What is the relationship between family functioning and child psychopathology, and will clinicians' and patients' reports of family functioning be lower (more dysfunctional) than the ratings of parents, as indicated in the literature?

Hypothesis Four:

There will be an inverse relationship between children's report of family functioning and raters' observations of family functioning on the TCFES and the SFI, as well as a positive relationship between parent's report of family functioning and raters' observations of family functioning. There will be an inverse relationship between parents' self-report of family functioning and children's self-report of family functioning.

Secondary Aims: Maternal Psychopathology

Question Three:

Is maternal eating pathology related to more dysfunctional family interactions?

Hypothesis Five:

An inverse association will be observed between mothers endorsing symptoms of Eating Psychopathology (MAC-R) and overall family dysfunction (as measured by a low score on the TFCES global competence scale).

Question Five:

Do the children of mothers who endorse ED symptoms exhibit greater severity of illness (ED)?

Hypothesis Six:

Children whose mothers report distorted cognitions regarding weight and shape will also exhibit such distorted cognitions.

CHAPTER IV

METHOD

Eating Disorder Subjects

All ED subjects were children and adolescents between the ages of ten and eighteen years of age, who were being treated as inpatients at CMC for an eating disorder—those who, upon admission to the inpatient program, met DSM-IV criteria for Anorexia Nervosa, Bulimia Nervosa or Eating Disorder, not otherwise specified. While individuals who also met DSM-IV criteria for other Axis I disorders were not excluded from this study, the primary reason for admission to the inpatient unit was an eating disorder. The principal investigator recruited 29 subjects through direct solicitation on the inpatient unit. All subjects were free of any thought disturbances (i.e. psychotic disorder) and were of normal intellectual functioning ($IQ > 80$), as determined by history given by caregiver, medical chart review (including physician's notes), and direct observation. The subjects and caregivers signed the Informed Consent Form (See Appendix A) as well as the HIPAA form, detailing instances in which the subjects' protected health information (PHI) may be disclosed (See Appendix B). Twenty-nine subjects—25 females and

4 males completed baseline measures. One or both of the child's primary caregivers were present to complete the Timberlawn Couple and Family Evaluation Scale.

Major Depressive Disorder Subjects

The comparison group consisted of families who have a child being treated for depression. The subjects were enrolled in the Family Functioning in Children and Adolescents with Major Depression: Prediction of Response to Acute Treatment Study at the University of Texas Southwestern Medical Center (Kennard, principal investigator, 2003). This study was an expansion of a current study on Relapse and Remission in Children and Adolescents with MDD (Emslie, principal investigator, 2000). Fifty subjects (26 males and 24 females) completed baseline measures. One or both primary caregivers accompanied each subject, who ranged in age from 8 to 17 years and met DSM-IV criteria for major depressive disorder.

These two groups were compared to a set of data on non-clinical families. This data was collected by the Timberlawn Research Foundation for the purpose of obtaining clinical norms for the TCFES. This sample consisted of 28 families that were involved in a longitudinal study investigating the development of competent families (Cox, 1989; J. M. Lewis, 1989). Couples

were recruited from 23 obstetricians at a large metropolitan hospital. Of the couples contacted, 74% agreed to participate in the study of the development of healthy families. Forty families began the study at Time 1 (during pregnancy with first child), and 28 families remained in the study until Time 7 (when first child was in first grade). None of the couples referred to the study by the obstetricians were minorities. The sample consisted of 16 (57%) boys and 12 (43%) girls. Twenty-six of the families contained two parent families, while two of the families contained only one parent as a result of divorce. Families had an average of approximately two children (range 1 to 3). None of the families in the “Nonclinic” sample had children who were undergoing psychiatric treatment during the time of the study.

Inclusion and Exclusion Criteria—ED Subjects

Inclusion Criteria

1. Inpatients between the ages of 8 and 18 years of age who are living with one or both parents or a legal guardian who has been the child’s primary caregiver for at least one year.
2. Primary diagnosis of an eating disorder: anorexia nervosa, bulimia nervosa, or eating disorder not otherwise specified, as defined by DSM-IV criteria.

3. Subjects must be of normal intellectual functioning, i.e. IQ>80 based on WISC-IV, if a concern about intellectual capacities arise during clinical assessment.

Exclusion Criteria

1. Subjects who carry a diagnosis of a psychotic disorder will be excluded from this study.
2. While ED must be the primary cause for hospitalization, other concurrent disorders (e.g., non-psychotic depression, anxiety, obsessive compulsive disorders) are not excluded.

Inclusion and Exclusion Criteria—MDD Subjects

Inclusion Criteria

1. Outpatients 7-18 years of age and still attending school (i.e. older adolescents who have left school will not be included as school functioning is a major assessment area in this age group and an item on the severity scale [CDRS-R]).
2. Primary diagnosis of non-psychotic major depressive disorder (single or recurrent) for at least four weeks as defined by DSM-IV with a CGI = 4 for depression and CDRS-R = 40.

3. In good general medical health and normal intelligence, i.e. IQ > 80 based on WISC-III, if concerns about intellectual capabilities are evident on clinical assessment.

Exclusion Criteria

1. Subjects are excluded for lifetime history of any psychotic disorder, including psychotic depression; bipolar I and II disorder; alcohol or substance abuse or dependence within the past six months; lifetime anorexia nervosa or bulimia; pregnant or lactating females, sexually active females not using medically acceptable means of contraception (IUD, birth control pills or barrier devices); those with chronic medical illness requiring regular medication; those on medication(s) with psychotropic effects (anticonvulsants, steroids, etc.); patients with first degree relatives with Bipolar I Disorder; or subjects with severe suicidal ideation or previous history of serious suicide attempt.
2. Subjects who have failed on a previous adequate treatment with fluoxetine (defined as at least 20mg/day for 4 weeks) are excluded.
3. While the MDD must be the primary cause for dysfunction, other concurrent disorders (anxiety, attention deficit (ADHD), or conduct) are not excluded.

SETTING AND PROCEDURE

The following procedures were conducted at Children's Medical Center of Dallas (CMC) on the inpatient psychiatry unit. At the child's intake for admission to the program, the principal investigator gave the parent or legal guardian a consent form (see Appendix A), which included a written description of the study, as well as the nature and purpose of the project. In addition, the written form explained the procedure and any risks or benefits of the study. The form indicated that participation in the study is voluntary and that the decision not to participate would not affect the care provided to the child. The form also outlined confidentiality and legal rights. The principal investigator will answered any questions and made sure that the parents as well as the child fully understood the nature of the study. The caregiver was then asked to sign the Informed Consent Form. The principal investigator explained the study to the child in developmentally appropriate language. The child signed the consent form to give his or her assent to participate in the study after the parents consented on his or her behalf.

The female caregiver was asked to complete the Self-Report of Family Functioning—Second Edition, and the Mizes Anorectic Cognitions Scale—Revised (MAC-R). The patient was also asked to complete the Mizes Anorectic Cognitions Scale—Revised (MAC-R), and the Self-report of Family Functioning, Second Edition (SFI-II).

Within one week of admission to the inpatient unit, a trained interviewer met with the parent/legal guardian and subject separately using a semi-structured DSM-IV based interview to obtain valid diagnoses. The semi-structured interview being administered is the Schedule for Affective Disorders and Schizophrenia for School Aged Children, Present and Lifetime (K-SADS-PL) (Klein, 1993). During the time scheduled to complete the K-SADS, the clinician will also complete the Childhood Depression Rating Scale—Revised (CDRS-R) (Poznanski et al., 1984).

The family measures being used in this study include the Self-Report Family Inventory—Second Edition (SFI-2) (Hampson, 1989) and the Timberlawn Couple and Family Evaluation Scales (TCFES) (J. M. Lewis, Gossett, J.T., Housson, M.M., & Owen, M.T., 1999). The TCFES is an observational measure of family functioning in which parent and child dyads (other family members included when possible) were video taped participating in three separate eight-minute tasks. More specifically, they were asked to discuss strengths in their families, sources of disagreement in their families, and then were asked to plan a family activity. Prompts for each task were given via an audio tape set up in the room, and only the family members were present in the room during the taping. The families all completed the TCFES within one week of admission into the hospital. All raters were trained by an expert on the Timberlawn Couple and Family Evaluation Scales. Initial training was done with Timberlawn foundation

tapes of both clinical and non-clinical families, and then the expert trained raters on tapes from the MDD sample. After the initial training, two “expert” raters rated a subset of tapes (25%), with an intraclass correlation coefficient of .909 established on TCFES Sum of Scales. Subsequent raters were trained to at least a .80 level of reliability against the expert raters on 12% (5) of the tapes. Once expert level of interrater reliability was obtained, a trained rater rated remaining tapes with every 4th tape double-rated to ensure rater drift did not occur. The same procedures were followed in order to establish inter-rater reliability on the ED sample, and every 5th tape was double-rated to ensure rater drift did not occur. When rater drift was found, the expert came back to do a “booster” session on tapes with the ED subjects as well as tapes of the MDD subjects.

For this study, the families were presented with three topics from the tasks suggested by the authors of the scale. They were video taped discussing for 8 minutes each of the following topics: 1. Discuss as a family what is strong about your family; 2. Discuss the major source of disagreement in your family; 3. Plan a family activity that involves all of you. The investigators received training on the scales using the manual, Timberlawn Couple and Family Evaluation Scales: A Rater Training Guide.

After the female caregiver and the patient completed all of the measures, the principal investigator collected the materials. The test materials were then taken to the Center for Pediatric Psychiatry. They were stored in a locked cabinet

in a locked room until they were scored. Once scored, the self-report measures were entered into a confidential computer base and, to ensure accuracy, were double-checked. They were returned to a locked file cabinet in a locked room. The tapes were also kept in the locked cabinet as well.

In addition to the self-report, observational, and clinician-rated measures listed above, demographic as well as illness variables were obtained for each subject. Demographic variables include: gender, age and race, and illness variables include: episode duration, number of episodes, and age of onset. The principal investigator obtained height and weight at admission for each subject from the medical chart. This information was used to calculate body mass index (BMI).

MEASURES

Diagnostic Measures:

The Schedule for Affective Disorders and Schizophrenia for School Aged Children—Present and Lifetime Versions (K-SADS-PL) (Klein, 1993)

The K-SADS-PL is an adaptation of the K-SADS (Chambers et al., 1985). The K-SADS-PL uses DSM-IV criteria to assess present episode and lifetime

history of psychiatric illness in children and adolescents. It is a semi-structured parent-child integrated clinical interview that utilizes an 82-symptom screen portion. To address differential diagnosis, it includes five supplemental packets, which include affective disorders, psychotic disorders, anxiety disorders, behavioral disorders, and a combined packet assessing substance abuse, eating disorders and tic disorders. Data from parents and children are collected separately, and responses are recorded on the same answer sheet by the same clinician to allow for a comparison of responses. The data from parents and children are synthesized based on the interviewer's clinical judgment in order to generate DSM-IV Axis I diagnoses. The K-SADS-PL uses a 0-3 point rating scale and provides global and diagnostic-specific impairment ratings.

Measures of Severity

The Children's Depression Rating Scale—Revised (CDRS-R) (Poznanski et al., 1984)

The CDRS-R is a 17-item clinician-rated instrument, modeled after the Hamilton Depression Rating Scale for adults, and is used to measure the presence and severity of depressive symptomatology in children and adolescents. The CDRS-R, a modified version of the CDRS (Poznanski, Cook, & Carroll, 1979), is a semi-

structured interview appropriate for children ages 6 to 12, adolescents, their parents, teachers, case workers, or other reliable informants. The item takes approximately 30 minutes to administer, and includes seventeen (17) symptom areas. The last 3 areas are evaluations of the child/adolescent's nonverbal characteristics. Each item is rated on a 1 to 5 or 1 to 7 point scale, with a 1 describing absence of the given symptom. The CDRS-R yields a total score from 17 to 113, with a score of 40 or greater is considered to be compatible with a diagnosis of depression. The CDRS-R has been used successfully in the psychopharmacology studies for some time and allows for ready comparison to be made across studies. In a recent study, the CDRS-R had good interrater reliability with an intra class correlation of .95; it also correlated highly with global ratings of improvement (Chambers et al., 1985).

Family Measures

Timberlawn Couple and Family Evaluation Scales (TCFES) (J. M. Lewis, Gossett, J.T., Housson, M.M., & Owen, M.T., 1999)

The TCFES, a revision of the Beavers Timberlawn Family Evaluation (J. M. Lewis, Beavers, W.R., Gossett, J.T., & Phillips, V.A., 1997), is a clinician rated observational measure which consists of 18 scales that measure competence

in the larger domains of system structure, autonomy, affect regulation, conflict, and problem-solving (see table below). Recent reliability and validity studies on the TCFES provide support for its use with clinical populations (J. M. Lewis, Gossett, J.T., Housson, M.M., & Owen, M.T., 1999). Reliabilities for the four family summary scores ranged from .83 to .87; the five a priori family domains ranged from .74 to .85; reliabilities of the family interaction individual scales ranged from .57 to .85, with a median reliability of .71. Family scales significantly distinguished between clinic and nonclinic samples [Sum of Scales ($F(1,72) = 14.75, p < .001$)] .

The Timberlawn Couple and Family Evaluation Scales

Structure <ul style="list-style-type: none"> • Overt Power • Adult Leadership • Inappropriate Parent-Child Coalition • Closeness 	Affect Regulation <ul style="list-style-type: none"> • Expressiveness • Responsiveness • Positive Regard • Negative Regard • Mood and Tone • Empathy
Autonomy <ul style="list-style-type: none"> • Clarity of Expression • Respect for Subjective Reality • Responsibility 	Disagreement/Conflict <ul style="list-style-type: none"> • Frequency • Affective Quality • Generalization and Escalation
Problem Solving <ul style="list-style-type: none"> • Closure • Negotiation 	Global Competence

Self-Report Family Inventory-2 (SFI-2) (Hampson, 1989)

The SFI-2 is a 36-item self-report instrument that evaluates family members' perspective of the domains of health/competence, conflict, cohesion, directive leadership, and emotional expressiveness. The health/competence subscale includes nineteen content items involving family affect, parental coalitions, problem-solving abilities, autonomy and individuality, optimistic versus pessimistic views, and acceptance of family members. The conflict subscale includes 12 content items dealing with overt versus covert conflict, including arguing, blaming, fighting openly, acceptance of responsibility, unresolved conflict and negative affect/tone. The cohesion subscale includes five content items involving family togetherness, satisfaction received from inside the family versus outside the family, and spending family time together. The leadership subscale includes three content items involving parental leadership, directiveness, and the degree of rigidity of control. The emotional expressiveness subscale includes six content items dealing with verbal and nonverbal expression of warmth, caring and closeness (Hampson, 1989). The scale is designed for family members 11 years of age and older, and all items with the exception of the last two (overall family rating and family independence rating) are answered on a Likert scale, with 1 being "Yes: Fits our family well," 3 being, "Some: Fits our

family some;” and 5 being, “No: Does not fit our family.” Internal consistency has been assessed at .86. (Cronbach’s alpha). Test-retest reliability coefficients (for 30 to 90 days) range from .84 to .87 for family health/competence, .50 to .59 for conflict, .50 to .70 for cohesion, .79 to .89 for expressiveness, and .41 to .49 for directive leadership. The SFI has demonstrated adequate concurrent validity through high correlations with other family self report instruments (Hampson, et al, 1989). For example, the SFI health/competence scale correlated $r=+.87$ with the general functioning factor of the McMaster Family Assessment Device (I. W. Miller, Epstein, N.B., Bishop, D.S., & Keitner, G.I., 1985). The SFI cohesion subscale correlates $r=-.82$ with the cohesion scale from the FACES III (Olson, 1982).

Self-Report Family Inventory-2

Health/Competence	<ul style="list-style-type: none"> • family affect, • parental coalitions, • problem-solving abilities, • autonomy and individuality, • optimistic versus pessimistic views • acceptance of family members
Conflict	<ul style="list-style-type: none"> • overt versus covert conflict (arguing, blaming, fighting openly, acceptance of responsibility, unresolved conflict, and negative feeling tone)
Cohesion	<ul style="list-style-type: none"> • family togetherness, • satisfaction received from

	inside the family versus outside, <ul style="list-style-type: none">• spending time together
Directive Leadership	<ul style="list-style-type: none">• parental leadership• directiveness• degree of rigidity and control
Emotional Expressiveness	<ul style="list-style-type: none">• verbal and nonverbal expression of warmth, caring and closeness

Eating Disorder Measures

The Mizes Anorectic Cognition Scale—Revised (MAC-R) (Mizes et al., 2000)

The MAC-R, a revision of the Mizes Anorectic Cognitions questionnaire (MAC), assesses cognitions relevant to anorexia nervosa and bulimia nervosa (even though the scale name refers only to anorexia). The MAC-R contains 57 items (33 from the MAC and 24 new questions added to the revised version), and examines three specific areas: rigid weight and eating regulation, weight and eating behavior as the basis of approval from others, and excessive self-control as a component of self-esteem (Mizes, 1990, 1992). The MAC-R is written at a sixth grade level and is suitable for persons in middle school through adulthood. Internal consistency for the total score of the MAC-R has been assessed at .90 (Chronbach's alpha), for the self-control scale, .84, approval, .85, and fear of weight gain, .82. Concurrent validity was demonstrated; the MAC-R was significantly correlated with the EDI total score (derived by summing all the EDI subscales) and with the EDI Restraint scale. More specifically, the EDI-2 summary score and MAC-R total score were significantly correlated ($r=.69$, $p=.00$), and the Restraint scale was also significantly correlated with the MAC-R

total score ($r=.62$, $p=.00$), the MAC-R self-control scale ($r=.70$, $p=.00$), approval ($r=.43$, $p=.00$), and fear of weight gain ($r=.40$, $p=.00$) (Mizes et al., 2000).

CHAPTER V

RESULTS

Statistical Analysis

Statistical analysis for this study took place in three phases. In the first phase, interrater reliability was established on the TCFES. Procedures used to train raters and to establish interrater reliability are detailed in the Methods section. Overall, Chronbach alphas ranged from 0.86 – 0.97, indicating an excellent level of interrater reliability.

In the second phase, efforts were made to ensure both diagnostic groups—MDD and ED—were comparable in terms of their demographic characteristics. Any identified differences were used for potential covariates for subsequent analyses. Chi-square analyses were performed and the two groups did differ significantly in terms of age and gender (See Table 1). Therefore, statistical analyses used to test specific hypotheses included analyses that treated gender and age as covariates to determine what effect, if any, these differences had on the primary outcome variables. Additionally, the intercorrelations of the various dependent variables were examined and if any variables had been found to be consistently and highly related to one another, they would have been combined or

entered simultaneously as appropriate. In this way, the overall number of dependent variables as well as the number of multiple comparisons would be reduced. However, such adjustments were unnecessary.

The third phase consisted of inferential analyses to address the specific hypotheses of this study. Group differences in the primary outcome variables (e.g., global family functioning, closeness, inappropriate parent-child coalition, depression, etc.) were evaluated using age and gender as covariates. Based on the above findings, I entered variables of interest in an updated model to predict change in the outcome variables. A general power analysis program, Power and Precision, (Borenstein, Rothstein, Cohen, Schoenfeld, & Berlin, 2001) found that this sample size was adequate to detect main effects between patient groups, with power of .80, alpha set at .01, and estimating a medium effect size for analyses of variance and multiple regressions. Due to the high degree of co-morbidity between ED and MDD, the ED sample was screened for the presence of a depressive disorder. Sixty-nine percent of the participants in the ED group met criteria for MDD (based on K-SADS diagnostic interview). Rather than employing a statistical approach in controlling this potential nuance variable, depression was incorporated into the study design. As a result, for some of the analyses the ED group was divided into two groups: ED depressed ($n = 20$) and ED non-depressed ($n = 9$).

Due to the small sample size, data screening for outliers was not performed. Hence, analyses presented do not include adjusted means for outcome variables of interest. Data were screened to ensure that the assumptions of factorial ANCOVA were fulfilled. In addition, data were screened to ensure that the assumptions of linear regressions were fulfilled. The independent variables are fixed and are measured without error, and the relationship between the independent variables and the dependent variable is linear. Intercorrelations among study variables were examined to minimize multicollinearity. Separate multiple regressions were conducted to determine which independent variables predicted the degree of conflict, closeness, and inappropriate parent-child coalitions.

Global Family Functioning—ED and MDD groups

Hypothesis One: *By way of an observational measure of family functioning, the MDD families will demonstrate less global competence than ED families, measured on the TCFES:* Observational data regarding global family functioning was collected on families who have a child with an eating disorder as well as families who have a child diagnosed with major depressive disorder. In testing hypothesis one, an analysis of variance was carried out on family functioning, measured by the global competence score on the TCFES, as a function of the patient's diagnosis (Eating Disorder families or Major Depressive

Disorder families). All tests were carried out at the 0.05 significance level; actual significance levels are given for information. ED families did not significantly differ from MDD families in terms of overall levels of rated global competence, $F(1, 77) = 1.17, p = .284, \text{partial } \eta^2 = .02$, such that ED families ($M = 9.10, SD = 3.09$) were rated as having the same level of family functioning as MDD families ($M = 9.90, SD = 3.28$). A power analysis suggested that a group of 250 would provide sufficient power (alpha set to .05, medium effect size anticipated); the sample for this investigation consisted of 79. A summary of these findings is presented in Table 2.

In order to determine what effect measured baseline severity of depression had on these results, a one-way Analysis of Covariance (ANCOVA) was carried out. The independent variable contained two levels: diagnosis of ED, and diagnosis of MDD. The dependent variable was the score on the Global Competence subscale of the TCFES, and the covariate was the total score on a measure of baseline severity of depressive symptomatology (CDRS total score). A preliminary analysis evaluating the homogeneity-of-slopes assumption indicated that the relationship between the covariate and the dependent variable did not differ significantly as a function of the independent variable, $F(1,75)=1.22, \text{MSE}=10.07, p = .27, \text{partial } \eta^2 = .004$. The ANCOVA was not significant, $F(1,76)=1.22, \text{MSE}=10.10, p = .65, \text{partial } \eta^2 = .011$. The strength of the relationship between diagnosis and the dependent variable (family

functioning) was not significant, such that diagnosis only accounted for 1.1% of the variance of the dependent variable, holding constant baseline severity of depression. Table 3 provides a summary of these results.

In order to evaluate the effect of diagnosis on global family competence when controlling for age and gender, an ANCOVA was performed. The covariate of age did not significantly influence the dependent variable of global family functioning $F(1, 75) = 0.04, p = 0.85$, nor did the covariate gender $F(1, 75) = 0.73, p = .39$. Table 4 provides a summary for this ANCOVA. Effect size indicates that a very small proportion of variance in global family functioning is accounted for by the independent variable.

Closeness and Inappropriate Parent-Child Coalition

Hypothesis Two: *ED families will exhibit greater levels of closeness and inappropriate parent-child coalition than the MDD families, as measured by the TCFES*. In testing hypothesis two, an analysis of variance was performed on closeness, measured by the TCFES, as a function of the patient's diagnosis (ED families or MDD families). There was no difference in rated levels of closeness between ED families and MDD families, $F(1, 77) = 1.26, p = .266$, partial $\eta^2 = .02$, such that ED families ($M = 3.31, SD = 1.11$) were rated as having the same level of closeness as MDD families ($M = 3.04, SD = .99$). Table 5 provides a summary of these results. A power analysis suggested that a group of 320 would

provide sufficient power (alpha set to .05, medium effect size anticipated); the sample for this investigation consisted of 79.

Similarly, an analysis of variance was performed with a dependent variable of inappropriate parent-child coalition, measured by the TCFES, as a function of the patient's diagnosis (ED families or MDD families). There was a significant difference in rated levels of inappropriate parent-child coalitions between ED families and MDD families, $F(1, 77) = 4.76, p = .032, \text{partial } \eta^2 = .06$, such that ED families ($M = 3.03, SD = 1.12$) were rated as having greater inappropriate parent-child coalitions (boundary problems) than MDD families ($M = 3.60, SD = 1.11$). Table 6 provides a summary of these results. Due to the observed significance, a linear equation was performed to identify potential predictors of inappropriate parent-child coalitions. The independent variables included in the regression equation consisted of patient's age, gender, diagnostic category, and total depression score (CDRS). Regression results revealed a model consisting of one predictor (patient's age) that significantly predicts inappropriate parent-child interactions, $R^2 = .138, R^2_{\text{adj}} = .091, F(4, 74) = 2.956, p < .05$. This model accounted for 13.8% of variance in inappropriate parent-child relationships. A summary of the regression model is presented in Table 7.

Because age was a significant predictor of inappropriate parent-child coalition, and was a confound (the MDD group and ED group differed

significantly in terms of age), an ANOVA was carried out on inappropriate parent-child coalition as a function of the patient's diagnosis, with all subjects under age 11 removed from the database. This resulted in an N of 27 in the ED group and an N of 30 in the MDD group. The ANOVA was found to be significant, $F(1, 56) = 11.81, p = .001$, such that ED families ($M = 2.89, SD = .73$) were rated as having greater inappropriate parent-child coalitions (boundary problems) than MDD families ($M = 3.63, SD = .89$). Table 8 provides a summary of these findings.

Conflict

Hypothesis 3: *MDD families will exhibit greater levels of conflict on an observational measure of family functioning than ED families.* To test this hypothesis, an analysis of variance was performed with a dependent variable of family conflict interactions, measured by conflict on the TCFES, as a function of the patient's diagnosis (ED families or MDD families). There was no difference in levels of rated conflict between ED families and MDD families, $F(1, 77) = 1.01, p = .317, partial \eta^2 = .01$, such that ED families ($M = 4.07, SD = 1.25$) were rated as having the same level of conflict as MDD families ($M = 3.78, SD = 1.22$). Table 8 provides a summary of these results. A power analysis suggested that a

group of 160 would provide sufficient power (alpha set to .05, medium effect size anticipated); the sample for this investigation consisted of 79.

Linear regressions were also calculated for each study sample independently to identify predictors of this endpoint variable. The independent variables included in the regression equation for the ED group consisted of patient's age, gender, and body mass index (BMI) at admission to the hospital. Regression results revealed an overall model consisting of two predictors (gender and admit BMI) that significantly predicts conflict, $R^2 = .416$, $R^2_{\text{adj}} = .318$, $F(4, 24) = 4.267$, $p < .01$). This model accounted for 41.6% of variance in conflict. A summary of the regression model is presented in Table 9. Linear regressions were also calculated for the MDD group to identify predictors of conflict for this group. The independent variables included in the regression equation for this group consisted of age, gender and CDRS total score (a measure of baseline severity of depression); however regression results did not reveal any significant predictors of conflict for this group.

Parent perception, child perception and rater observation of family functioning

Family Functioning (Clinicians, Patients, & Parents)

Hypothesis 4: *There will be an inverse relationship between children's report of family functioning and raters' observations of family functioning on the*

TCFES and the SFI, as well as a positive relationship between parent's report of family functioning and raters' observations of family functioning. There will be an inverse relationship between parent's self-report of family functioning and child's self-report of family functioning. In testing hypothesis four, raw scores were converted into transformed Z scores due to the two different measures employed. Correlation analyses partially supported this study hypothesis. First, a Pearson correlation between rated global competence on the TCFES and patient's reported health competence was found to be significant, $r(29) = -.49, p = .007$, such that the higher the clinician's reported global competence, the higher the child's reported health competence (higher values on the TCFES denote greater health, while lower scores on the SFI denote greater familial competence).

A Pearson correlation between rated global competence on the TCFES and parent's report of family functioning was not found to be significant, $r(29) = -.18, p = .36$, such that there is not a significant relationship between the rater's observation of global family functioning and parent's report of family competence.

Similarly, a Pearson correlation between the patient's reported health competence and the parent's reported health competence was found to be significant, $r(29) = .52, p = .004$, such that the higher the patient's reported health competence, the higher the parent's reported health competence. Summaries for

these correlations are presented in Tables 11-13. A summary of normative data for the SFI is presented in Table 14.

ED Cognitions—Mother and Child

Maternal Psychopathology

A secondary aim of this study was to evaluate the relationship between the mothers' reports of eating disordered cognitions and those of their children, as well as the relationship between mothers with eating disorder symptomatology and overall family functioning.

Hypothesis 5: *An inverse association will be observed between mothers endorsing symptoms of Eating Psychopathology (MAC-R) and overall family dysfunction (as measured by a low score on the TFCES global competence scale).*

In testing hypothesis five, raw scores were converted into transformed Z scores due to the two different measures employed. A Pearson correlation between the global competence scores from the TCFES and the mother's total MAC-R scores was carried out, but was not found to be significant, $r(29) = -.05, p = .809$, such that there was no relationship between rated global competence and mother's total MAC-R scores.

Hypothesis 6: *Children whose mothers report distorted cognitions regarding weight and shape will also exhibit such distorted cognitions.* To test

this hypothesis, a Pearson correlation was carried out between patient's total MAC-R scores and the parent's total MAC-R scores, and was not found to be significant, $r(29) = .01$, $p = .976$, such that there was no relationship between patient's total MAC-R scores ($M = 70.41$, $SD = 12.20$) and the parent's total MAC-R scores ($M = 69.90$, $SD = 9.58$). Tables 15 through 17 provide summaries of the results of these correlations.

CHAPTER VI

DISCUSSION

Overview of the Study

This study was designed to systematically evaluate family functioning of families who have a child being treated for an eating disorder, compared to families who have a child diagnosed with major depressive disorder, using an observational measure. The specific family characteristics examined were overall family functioning, inappropriate parent-child coalitions (enmeshment), closeness, and conflict. The parents' perceptions of family functioning, the children's perceptions of family functioning, and the raters' observations of family functioning were also assessed. In addition, the study evaluated the relationship between mothers' cognitions regarding food, weight, and shape and their daughters' cognitions regarding the same constructs.

This chapter includes: 1) a discussion of the results of this study and conclusions drawn from these results, 2) limitations of the present study, and 3) areas for future research which are suggested from the results of this study.

Demographic Information and Diagnostic Information

The initial goal of this study was to determine characteristics of family functioning unique to ED families. This was accomplished by comparing families with a child with ED to families who have a child with MDD. The MDD and ED varied in terms of age and gender, with ED being significantly more prevalent among adolescent females, and the ED group being significantly older than the MDD group.

Family Functioning

This study involved children undergoing inpatient treatment (ED subjects) as well as those undergoing outpatient treatment (MDD subjects). The literature suggests that families who have a child with MDD tend to be more conflicted, chaotic, and less cohesive—an observation from which the hypothesis that the MDD families would obtain lower (more dysfunctional) scores in terms of overall family functioning than the ED subjects was derived.

During the first stage of analyses, the present study failed to support hypothesis one as no statistically significant differences were observed between these groups in terms of global family functioning. These findings may suggest

that families who have a child suffering from either an eating disorder or depression may exhibit a greater number of problems in terms of family functioning than do families with no history of child psychopathology, but that the deficits in family functioning do not appear to be unique or specific to either ED or MDD. An additional explanation for why a statistically significant difference between the groups was not found could be due to the high degree of co-morbidity between the two diagnoses. Such overlap might obscure any real differences that might actually exist, underscoring the need to include an eating pathology without depression group.

As discussed in the literature review, ED patients often exhibit symptoms of depression that frequently meet full criteria for a diagnosis of MDD. In the study sample, 69% of ED patients also had a co-morbid diagnosis of MDD. When analyses statistically controlled for severity of depression, differences in overall family functioning still did not emerge. Because of its potentially influential role on family functioning, depression was converted into a covariate; hence, the study design incorporated depression as an independent variable. The ED group was divided into two groups—ED with MDD and ED without MDD. In view of the fact that groups significantly differed in gender ratio, further efforts to find support for hypothesis one also involved incorporating gender as an independent variable. Although neither gender nor diagnostic category (ED with MDD, ED without MDD, and MDD) differed independently in their level of

global family competence, a significant interaction was observed suggesting that families with a male child diagnosed with ED without depression had the lowest level of family functioning. It may be speculated that because eating pathology is more frequently observed among women, the presence of an eating disorder in a male child might pose a greater threat to overall family functioning than in a female child. The latter part of this interaction—eating disorder without depression—might exert a greater effect on family functioning in that the behaviors rather than emotions consume the families' attention. That is, the family becomes focused on the symptomatic child's behavior, and the focus becomes keeping that child alive, rather than dealing with the more ambiguous emotional aspects of childhood depression. This acute stressor of having a child who is starving could potentially be more disruptive to family functioning and routine than coping with emotional aspects of a child who is depressed. While these findings are preliminary, they underscore the need to further evaluate this interaction.

A shortcoming of previous studies assessing family functioning in eating disorders is a lack of a well-defined psychiatric comparison group. The majority of the literature in this area focused on ED families and "normal" families, enabling researchers to appropriately conclude that disruption in family functioning is simply the result of having a child with a psychiatric disorder. That is, the presence of psychopathology within a family presents as a stressor with the

potential to disrupt family functioning and routine. Albeit important data, such research designs do not allow us to evaluate whether such disruption directly relates to the defining features of the psychiatric condition. Simply stated, are there specific aspects of eating pathology that render the family system vulnerable to compromise in overall family functioning?

In this sample, overall family functioning did not differ between ED and MDD families; however, the study did find how specific aspects of family functioning did differ between the two groups. This latter finding may shed light on specific mechanisms that contribute to the qualitative differences observed. In terms of hypothesis two, the degree to which closeness or an inappropriate parent-child relationship was observed varied between depressed and eating disordered families.

The closeness subscale on the TCFES represents the extent to which families share beliefs, interests and ideals. Signs of closeness include both non verbal markers, such as physical closeness or developmentally appropriate touching. Other markers of closeness within a family consist of behaviors such as laughing, or discussing activities they enjoy doing together. No significant differences were observed between the two groups of families suggesting that the diagnosis itself may not influence the level of closeness in the family.

The inappropriate parent-child coalition subscale on the TCFES represents the extent to which boundary problems exist within a family system. More

specifically, the inappropriate parent-child coalition scale conveys a quality of the family structure by defining the existence of a parent-child relationship that functions in a manner to exclude or collude against other family members. Chronic marital conflict or lack of a strong coalition between parents interferes with the development of intimacy between spouses, and in turn, one or both parents may seek closeness outside of the marital relationship (often seeking this level of closeness with their children) (Housson, 1996). The resulting parent-child relationship that may emerge is one that serves to fulfill the needs for closeness and intimacy for one or both spouses. This “special” relationship between child and parent may present as over-involvement or as behavior that is overly angry, argumentative, eroticized, and/or competitive.

The ED families were found to have more problems with inappropriate parent-child coalitions than MDD families, suggesting that families with children with ED are more susceptible to engaging in enmeshment. Interestingly, families with children with ED and an accompanying MDD diagnosis did not differ from families with children with MDD. This finding suggests that the presence of depressed mood may actually buffer or restrict the family from forming such a maladaptive coalition. Additional analyses found that age presented as a significant predictor of the degree of inappropriate parent-child coalitions. Specifically, older children in the study were more likely to have a greater degree of ‘enmeshment’ than younger children with psychopathology. Adolescence is

typically associated with increased independence, and a desire to associate with the peer group over the parents. However, in the present study, the older children exhibited more problems with an overly close relationship with their parents than younger children. This deviation from is considered to be “normal” individuation during adolescence possibly highlights a unique characteristic of adolescents with ED. Previous studies have found boundary dissolution to be a key variable in the development and maintenance of ED in children (E. Kog, and Vandereycken, W., 1989; E. Kog, Vertommen, & Vandereycken, 1987). Theorists have suggested the reason for the relationship between enmeshment within a family system and subsequent ED in children is related to the child’s inability to develop a sense of autonomy and independence. A well-established observation is the fear of maturity that is disproportionately overrepresented among patients with eating disorders.

In terms of the second component of hypothesis three, it was anticipated that based on the findings in the literature, the MDD families would exhibit greater levels of conflict than the ED families. However, a significant relationship between conflict and diagnostic group was not observed. There are a myriad of studies describing ED families as tending to be conflict avoidant, while MDD families are characterized by higher levels of overt conflict. Even while holding age and gender constant, no significant differences were found between the two groups in terms of conflict. However, regression analyses revealed that, for this

sample, a lower body mass index (BMI) at admission to the hospital (indicating a more severe an eating disorder) and gender (specifically female) predicted lower levels of conflict within the family. While the combination of gender and severity of illness (measured by BMI) were found to significantly predict this endpoint variable, caution is warranted when interpreting these findings due to only having four males in the ED sample. However, this finding does support previous studies indicating families with ED are conflict avoidant. Unlike most other psychiatric disorders, ED is coupled with numerous medical complications, including decreased kidney function, decreased bone mass, electrolyte imbalance, and serious cardiac risks that can be fatal. Therefore, these families are likely so focused on ensuring their children's survival, that any conflict in the family is secondary to the severity of the ED. This is particularly true for this sample, in which all subjects' ED is severe enough to warrant hospitalization. Simply the nature of having a child in the hospital would likely cause a family to set aside any conflict in the system, as the focus moves to helping the ill child recover. Thus, this finding underscores the role ED plays within the system, and how ED may help the family to function in such a way that the child's behavior drives the family's focus away from potential difficulties or conflicts. The child then becomes the identified patient of the system, in which the family's difficulties or problems become manifest in the child's illness.

Overall, the results from the TCFES suggest that the ED families have more problems with inappropriate parent-child coalitions, meaning that they exhibit difficulties with boundaries and may have collusions within that family that serve to meet intimacy needs of one or both parents. This finding from the TCFES is compounded by the finding that the more severely ill ED children's families displayed less conflict within the system. Together, these data support previous definitions of ED families as conflict avoidant and enmeshed.

Aside from an observational measure of family functioning, the ED families in this study were also given self-report measures of family functioning. Previous studies have found that parents and children typically disagree regarding the nature of their families, with children reporting more dysfunction within the system and parents' ratings reflecting greater familial competence. Children's ratings are typically consistent with clinician's ratings and observations. These findings from the literature were only partially supported in our sample.

Contrary to prior studies looking at parent and child reports of family functioning, the ED patients' report of family functioning was significantly correlated with their parents' report of family functioning, and both groups rated their family in the healthy range (the cutoff for the SFI are: < 3 = healthy, > 3 = unhealthy). These results coupled with the finding on the TCFES that the ED families are more enmeshed than the MDD families, suggests a family system characterized by overinvolvement in which parent and child are viewing the

family in very similar terms. Divergent viewpoints regarding familial competence are likely to be particularly prominent between adolescents and their parents. These data might suggest that enmeshment fosters and maintains pathology within the family system by minimizing the any dysfunction present. Further buffering any efforts to address decreased family competence is that enmeshment allows for the attenuation of distress in fear of abandonment or for fear of maturing and becoming more responsible—a common finding among children with ED.

Consistent with Hypothesis four and findings from prior studies, an inverse relationship between children's and clinicians' ratings in terms of global family competence on the SFI and TCFES suggest that their views of family functioning are commensurate. These data bear a number of consequences. The correlation between child and rater observation of family functioning may indicate that children may be less resistant to recognizing the degree of impairment within the family system. However, the significant relationship between parent and child self report of family competence, suggests that parents and children view the overall quality of family functioning in a similar manner. Thus, children's perspectives of the nature and quality of family relationships may serve to bridge the gap between the parent's views and the raters' observations. From a treatment perspective, these findings suggest that a family systems approach would likely be the optimal treatment modality for ED families.

Investigation into the variables on which ED parents' and children's viewpoints converge and diverge may also provide some understanding of any other underlying mechanisms (in addition to enmeshment) that may maintain the eating disorder as well as any dysfunction within the family system.

The present study did not find support for hypotheses five and six. One explanation to account for the absence of a significant relationship between mothers' endorsement of cognitions of eating pathology and clinicians' ratings of family functioning is that such cognitions alone are not salient enough of a factor to influence the family system. That is, there is likely a convergence of factors that contribute to family competence, and a mother's endorsement of eating pathology may actually represent a bona fide threat to family competence, but that it interacts or must accompany other variables. Also, mothers were assessed for the presence of eating disorder cognitions rather than eating disorder related behaviors. Assessment of mothers' cognitions as well as behaviors might have yielded different results.

Similarly, no relationship was observed between children's endorsement of eating pathology and parents' endorsement of eating pathology. This finding underscores the complexity of eating disorders, and again suggests that cognitions alone may not be salient enough a feature to influence children's behavior. Mothers were assessed within one week (typically less) of admitting their children to an inpatient treatment facility for an eating disorder. This likely resulted in a

heightened awareness of eating related cognitions and behaviors, that may have led to underreporting on the MAC-R, a fairly face valid measure. Together, the findings from hypotheses five and six underscore the complex nature of eating disorders and eating psychopathology as a whole, and the many variables that influence the quality of overall family functioning.

Overall, the results generate a portrait of a family structure within the ED group that is characterized by enmeshment and conflict avoidance. The early descriptions of anorexic families, as defined by Minuchin, described these families as “psychosomatic,” enmeshed, overprotective, rigid, and conflict avoidant. Similarly to Minuchin’s early description of anorectic families, the results from the TCFES suggest that the ED families in our study were overly involved, and the relationship between parent and child was one that served to collude against or exclude either the other parent or another member of the family. These findings are highlighted by the family being avoidant of conflict, which was particularly significant in the case of the children with more severe ED. While the study does not nullify the possibility that family competence is equally susceptible to compromise from any form of child psychopathology, clearly there are data that would suggest that the family with a child with ED differs from families whose child suffers from another type of pathology. Such differences may ultimately explain the reticence that clinicians encounter in working with children with eating pathology.

Limitations

The present study has a number of limitations that warrant discussion. First, problems with power emerged by splitting the eating pathology group into two groups based on the presence of MDD. In some instances, the resulting subgroups were comprised of very few participants. With only four males diagnosed with an eating disorder, caution must be exercised in interpreting findings based on gender. Yet, it could be argued that such comparisons are essential in that the underlying mechanisms of eating disorders do vary between males and females. Simply controlling gender would not yield relevant information as to whether the family system responds differently to a male child with an eating disorder than a female child with an eating disorder. A larger study sample would allow for comparisons among the subgroups as well as improve the external validity of the sample by having a more representational sample. Minorities were underrepresented in the present study.

Second, concerns surrounding the validity of comparisons between the study sample means and the non-clinical sample should be recognized. The non-clinical sample was under the age of seven, whereas the study sample was older than seven years of age. In addition, the manner in which the non-clinical normative data for the TCFES did not screen for psychopathology. That is, the

possibility remains that members of the non-clinical sample met criteria for a psychiatric condition, and therefore, do not represent a “healthy” population. The inclusion of an age-matched, healthy control sample would clarify whether the presence of psychopathology alone compromises family competence or if unique features of a specific condition exert a selective effect. However, due to the time-burden of the study, recruitment of such a sample is not feasible.

A methodological limitation that should be raised bears on how the TCFES is administered. Specifically, observations of families were based on varying numbers of family members present for testing. While I tried to tape whole families, that was often not feasible due to having to work within the schedule of an inpatient unit, and accommodate families’ schedules. It could be argued that the number of family members present might influence the ratings of subscales. Further, only mothers completed the self-report of family functioning (except in one case where the father is the child’s primary caregiver), generally because they more frequently were able to complete the TCFES with the child.

While the sample was primarily Caucasian, our sample did seem to match base rates for ED in terms of ethnicity. So, while this may jeopardize the generalizability of these findings to other ethnic groups, the percentage of ethnicities represented in this study does appear to be congruent with the eating disorder population.

Areas for Future Research

The nature of family relationships is complex, and a variable that is difficult to study. However, investigation into family relationships and family characteristics remains a vital focus of current and future research of among children with psychopathology. In this study, important variables (e.g., gender and depression) were incorporated into the research design rather than being used as covariates to shed light on possible differences emerged between the MDD and ED groups in terms of family functioning. While the investigators would advocate that such an approach be used in future studies, further incorporation of independent variables created subgroups too small to compare. Future studies must include a larger sample size to make such appropriate comparisons. In addition, to truly address whether global family functioning is either universally or selectively vulnerable to pathology truly warrants a research design that allows for comparison to a “normal” group of families. Finally, this study has successfully highlighted the complex, multidimensional nature of global competence. Future research should attempt to develop a testable conceptual model that might be able to delineate the pathways that contribute to global competence, and to test this model in an eating pathology population.

Appendix A
(Consent form)

The University of Texas Southwestern Medical Center at Dallas

Children's Medical Center at Dallas

CONSENT TO PARTICIPATE IN RESEARCH

Title of Research: Family Functioning in Children and Adolescents with Eating Disorders

Sponsor: Timberlawn Research Foundation

Investigators:	Telephone No. (regular office hours)	Telephone No. (other times)
Betsy Kennard, Psy.D.	214.648.4403	214.648.4403
Stephanie Setliff, M.D.	214.456.6471	214.456.6471
Wells Housson, B.A.	214.648.4447	214.648.4447

PURPOSE: The primary purpose of this study is to investigate family interaction patterns in children and adolescents who have been diagnosed with an eating disorder (ED) and to determine whether these patterns respond to treatment. The second aim is to determine whether family functioning at admission to the hospital predicts response to inpatient psychiatric treatment. The third aim will be to compare families who have a child with an eating disorder to families with a depressed child to determine characteristics unique to ED families. The final aim is to assess the effectiveness of the inpatient treatment program at Children's Medical Center in changing dysfunctional family interaction patterns.

PROCEDURES: This study will assess patients recently admitted to an inpatient program for treatment of Eating Disorders via self report questionnaires as well as videotaped interactions between patients and either one or both parents. Questionnaires and videotaped interactions will help assess weight characteristics, behaviors, interaction styles, symptoms of eating disorders, and family functioning. Diagnostic evaluations and assessments of behavioral and cognitive aspects of disordered eating will also be obtained. The diagnostic evaluations and assessments will measure the general cause, development, and outcome of an eating disorder in the patient, as well as measure depressive symptoms and the

amount of change from entry to discharge in the patient's performance. The diagnostic evaluation will only be done at study entry.

Initial Visit

During the first evaluation you and your child will be asked questions about your child's eating habits, and a variety of symptoms that adolescents sometimes have. These questions will be in the form of an interview and written questionnaires. In addition, your family will be asked to discuss three topics for eight minutes each. Your discussion will be videotaped so that they can later be coded on a measure of family interaction. This visit will last approximately three hours.

Follow- up

Follow-up assessments of you and your child, including all measures other than the diagnostic interview, will be conducted at discharge, 6 months and 12 months after discharge. . In addition, your child will also be assessed for any depressive symptoms after discharge, as well as response to the prior treatment of the eating disorder. The data collected from your child will be compared to existing data from children with the diagnosis of Major Depressive Disorder for this study.

Study Duration

The individual subject duration in the study is based on their length of stay in the hospital. Most patients remain in the inpatient program anywhere from 4 to 8 weeks. However, some patients remain in the inpatient unit much longer. After discharge from the inpatient unit, two follow-ups will be conducted at 6 months and 12 months. Depending upon inpatient stay, the study can last from 52 weeks up to 56 weeks. Again this could be longer, if the patient remains hospitalized for an extended period of time.

POSSIBLE RISKS: The risk of this study involves discussing information that you or your child may feel uncomfortable talking about. All participants will be told that they do not have to answer any questions if they are uncomfortable. Subjects who appear or express any discomfort with the procedure will be interviewed by the research coordinator or Dr. Kennard to determine the need for intervention. All data will be password protected. Participation in this study does require you to be videotaped and to sign a consent form. The consent form, which will have the patient's signature, as well as the videotape of the parent-child interaction could be linked to subjects. The videotapes will be labeled with identification numbers only and only Dr. Kennard and her research assistants will have access to and be able to view the tapes. The consent form will be kept in a

locked cabinet inside charts with only identification numbers labeled on cover, which only Dr. Kennard and her research assistants will have access.

POSSIBLE BENEFITS: While there is no specific benefit to subjects for participation, the results of this research may help determine factors that contribute to treatment response, which may help others in the future who have the same disorder.

PAYMENT TO TAKE PART IN THIS RESEARCH: Subjects will not be paid for participation in this research.

VOLUNTARY PARTICIPATION IN RESEARCH: Your child has the right to agree or refuse to participate in this research. If your child decides to participate and later changes his/her mind, he/she is free to discontinue participation in the research at any time.

Refusal to participate will involve no penalty or loss of benefits to which your child is otherwise entitled. Refusal to participate will not affect your child's legal rights or the quality of health care that your child receives at this center.

ALTERNATIVES TO PARTICIPATION IN THIS RESEARCH: Your child does not have to participate in this research to receive care for your medical problem. Please ask Dr. Kennard as many questions as you and your child wish. Dr. Kennard's answers to your questions could help you decide whether to participate in this research or receive the standard care that is currently available for your child's medical problem.

If your child decides to participate in research now, and later changes his/her mind, your child may stop his/her participation in the research then and receive the alternative care.

RECORDS OF YOUR PARTICIPATION IN THIS RESEARCH

Information pertaining to your participation in this study that will be kept at

UT Southwestern: You and your child have the right to privacy. All

information obtained from this research that can be identified with you or your child will remain confidential within the limits of the law. You and your child will need to sign a consent form to participate in this study, which will contain both of your names. You and your child will also be videotaped during this study. The videotapes will be labeled by an identification number only. The videotapes and the consent forms will be maintained in separate locked files and only Dr. Kennard and her research assistant will have access to the videotapes. Data entered into the computer for this study will be coded by with a variable called a “study identifier”. No match-up of the data to the subject will be able to be made. The “study identifier” will be included in the database for all subjects. The study identifying variable will be used in data analysis as a comparative variable to distinguish study outcomes. Separate “study identifiers” will be used in order to compare the patients of the Eating Disorder study and the Major Depressive Disorder study.

Information available to other people: An Institutional Review Board (IRB) is a group of people who are responsible for assuring the community that the rights of participants in research are respected. Members and staff of the IRB at this medical center may review the records of your child's participation in this research. A representative of the Board may contact you or your child for information about both of your experiences with this research. If you or your

child wish, either or both of you may refuse to answer any questions the representative of the Board may ask.

Research personnel at the Timberlawn Research Foundation (the sponsor of this study) may review your child's medical and research records kept at UT Southwestern to assure the quality of the information used in the research.

Publication of the results of the research: The results of this research may appear in scientific publications without identifying you or your child in any way.

YOUR QUESTIONS: Dr. Kennard is available to answer you and your child's questions about this research at 214.648.4403. The Chairman of the IRB is available to answer questions about your child's rights as a participant in research. You may telephone the Chairman of the IRB during regular office hours at 214-648-3060.

YOU WILL HAVE A COPY OF THIS CONSENT FORM TO KEEP.

Your signature below certifies the following:

- * You have read (or been read) the information provided above.

- * You have received answers to all of your questions.
- * You have freely decided to participate in this research.
- * You understand that you are not giving up any of your legal rights.

Participant's Name (printed)

Participant's Signature

Date

Legally responsible representative's name
(printed) (if applicable)

Legally responsible representative's
Signature (if applicable)

Date

Witness' name (printed)

Witness' signature

Date

Name (printed) of person obtaining

Consent

Signature of person obtaining consent

Date

ASSENT OF A MINOR:

I have discussed my participation in this research with my mother or father or
legal guardian and my study doctor, and I agree to participate in this research.

Signature (participants from 10 to 18
years old)

Date

Tables

Table 1

Demographic Characteristics by Group

	ED Group	MDD Group	Chi Square	p-values
Gender	Females = 25	Females = 24	11.94	.001
	Males = 4	Males = 27		
Age	M = 14.04, SD = 1.84	M = 11.49, SD = 2.66	25.82	.007
Ethnicity	Caucasian = 23(79.3%)	Caucasian = 34(66.7%)	2.00	.572
	African American = 2(6.9%)	African American = 7(13.7%)		
	Hispanic = 3(10.3%)	Hispanic = 9(17.6%)		
	Asian = 1(3.4%)	Asian = 1(2%)		

Table 2

ANOVA Summary Table for Global Competence MDD and ED Groups

Source	SS	df	<u>F</u>	<u>p</u>
Between Groups	11.65	1	1.17	.284
Within Groups	769.19	77		
Total	780.84	78		

Table 3
Summary of ANCOVA—Depression

Source	SS	df	MS	F	p	η^2
Between diagnoses	25.44	3	8.48	.842	.48	.03
Diagnosis	8.82	1	8.82	.875	.35	.01
CDRS Total	2.97	1	2.97	.295	.59	.00
CDRS*Diagnosis	12.26	1	12.26	1.22	.27	.02
Error	755.40	75	10.07			
Total	7750.00	79				

Table 4
ANCOVA Summary Table—Age and Gender

Source	SS	df	MS	F	p	η^2
Age _{cov}	.350	1	.350	.04	.85	.000
Gender _{cov}	7.42	1	7.42	.73	.39	.010
Diagnosis	17.78	1	17.78	1.76	.19	.023
Error	760.19	75	10.14			
Total	7750.00	78				

Table 5
ANOVA Summary Table for Closeness MDD and ED Groups

Source	SS	df	<u>F</u>	<u>p</u>
Between Groups	1.34	1	1.26	.266
Within Groups	82.13	77		
Total	83.47	78		

Table 6
ANOVA Summary Table for Inappropriate Parent-Child Coalition MDD and ED Groups

Source	SS	df	<u>F</u>	<u>p</u>
Between Groups	5.87	1	4.78	.032*
Within Groups	94.97	77		
Total	100.84	78		

Table 7
Coefficients for Model Variables for Inappropriate Parent-Child Coalition

	B r	β	t	p	Bivariate r	Partial
Dep_Nond	.037	.028	.216	.830	.172	.025
Age _{cov}	-.113	-.267	-2.14	.032	-.332	-.242
Gender _{cov}	-.330	-.143	-1.19	.238	-.249	-.137
CDRSTOT	-.012	-.100	-.891	.376	-.087	-.103

Table 8
*ANOVA Summary Table for Inappropriate Parent-Child Coalition MDD and ED
 Groups—Younger Children Excluded*

Source	SS	df	<u>F</u>	<u>p</u>
Between Groups	7.94	1	11.81	.001*
Within Groups	37.65	56		
Total	45.59	57		

Table 9
ANOVA Summary Table for Conflict MDD and ED Groups

Source	SS	df	<u>F</u>	<u>p</u>
Between Groups	1.53	1	1.01	.317
Within Groups	116.44	77		
Total	117.98	78		

Table 10

Coefficients for Model Variables for Conflict—ED Group only

	B	β	t	p	Bivariate r	Partial r
Admit BMI	-.252	-.456	-2.803	.01	-.386	-.497
Age _{cov}	.012	.018	.110	.913	-.097	.023
Gender _{cov}	1.850	.519	3.249	.003	.429	.553
CDRS Total	.021	.185	1.170	.254	.101	.232

Table 11

*Child Report of Family Functioning and Mother Report of Family Functioning
Correlated – ED Group (N=29)*

<u>Child</u>	<u>Parent</u>	<u>n</u>	<u>r</u>	<u>Sig.</u>
SFI-2 HC	SFI-2 HC	29	.520	.004**
SFI-2 Coh	SFI-2 Coh	29	.253	.186
SFI-2 Con	SFI-2 Con	29	.316	.095
SFI-2 Lead	SFI-2 Lead	29	.391	.036*
SFI-2 Expr	SFI-2 Expr	163	.358	.057

** Correlation is significant at the 0.01 level

* Correlation is significant at the 0.05 level

Table 12
*Child Report of Family Functioning and Rater Observation of Family
 Functioning Correlated – ED Group (N=29)*

<u>Child</u>	<u>Rater</u>	<u>n</u>	<u>r</u>	<u>Sig.</u>
SFI-2 HC	TCFES—GC	29	-.494	.007**

** Correlation is significant at the 0.01 level

Note: Lower scores on the SFI denote greater levels of health, while higher scores are indicative of greater competence on the TCFES.

Table 13
*Mother Report of Family Functioning and Rater Observation of Family
 Functioning Correlated – ED Group (N = 29)*

<u>Parent</u>	<u>Rater</u>	<u>N</u>	<u>r</u>	<u>Sig.</u>
SFI-2 HC	TCFES—GC	29	-.178	.355

Note: Lower scores on the SFI denote greater levels of health, while higher scores are indicative of greater competence on the TCFES.

Table 14
Summary of Normative Data for SFI-2

SFI-2*	Normative Sample						
	Total ED Group (N=29)	Healthiest		Mid-Range		Least Healthy	
	<u>M</u>	<u>M</u>	<u>p</u>	<u>M</u>	<u>p</u>	<u>M</u>	<u>p</u>
Child							
Health Competence	2.25	2.06	.223	2.92	< .001	3.03	< .001
Cohesion	2.76	2.72	.773	3.48	< .001	3.56	.001
Conflict	2.21	2.16	.744	3.07	< .001	3.34	< .001
Leadership	2.45	1.91	.001	2.18	.090	2.63	.005
Expressiveness	2.08	1.80	.146	2.71	.002	2.50	.002
Parent/Mother							
Health Competence	2.23	1.96	.048	2.52	.038	3.01	< .001
Cohesion	2.59	2.29	.061	2.87	.086	3.20	.001
Conflict	2.35	2.17	.108	2.96	< .001	3.37	< .001
Leadership	2.33	2.00	.007	2.51	.134	2.68	.005
Expressiveness	2.01	1.65	.031	2.20	.229	2.55	.002

Note. * SFI-2 lower score = more health

Table 15
Mother Report of Family Functioning and Rater Observation of Family Functioning Correlated – ED Group (N = 29)

<u>Parent</u>	<u>Rater</u>	<u>N</u>	<u>r</u>	<u>Sig.</u>
SFI-2 HC	TCFES—GC	29	-.178	.355

Note: Lower scores on the SFI denote greater levels of health, while higher scores are indicative of greater competence on the TCFES.

Table 16
Mother Report of Eating Disordered Cognitions and Rater Observation of Family Functioning Correlated—ED Group
(N = 29)

<u>Mother</u>	<u>Rater</u>	<u>N</u>	<u>r</u>	<u>Sig.</u>
MAC-R— Sum of Scales	TCFES— Global Competence	29	-.047	.809

Table 17
Mother Report of Eating Disordered Cognitions and Child Report of Eating Disordered Cognitions Correlated—ED
Group (N = 29)

<u>Mother</u>	<u>Child</u>	<u>N</u>	<u>R</u>	<u>Sig.</u>
MAC-R— Approval	MAC-R— Approval	29	-.012	.949
MAC-R— Weight Reg	MAC-R— Weight Reg	29	-.131	.499
MAC-R— Self Control	MAC-R—Self Control	29	.220	.252
MAC-R— Total	MAC-R—Total	29	-.056	.772

Table 18

Summary of Normative Data for TCFES and MDD Group at Baseline

Scale	<u>MDD Group</u> (<u>n</u> =50) M (SD)	<u>"Nonclinic"/Normal Controls</u> (<u>n</u> =28) M (SD)	<u>P</u>
I. Structure			
Overt Power	3.02 (.82)	3.86 (.93)	.000*
Adult Leadership	3.02 (.89)	3.46 (1.07)	.001*
Inappropriate Parent Child Coalition	3.60 (1.12)	3.29 (.94)	.053**
Closeness	3.04 (.99)	3.64 (.87)	.000*
II. Autonomy			
Clarity of Expression	3.12 (.85)	3.71 (.81)	.000*
Respect for Subjective Reality	3.00 (.88)	3.50 (.79)	.000*
Responsibility	2.78 (.76)	3.69 (.91)	.000*
III. Problem Solving			
Closure	2.88 (.72)	3.46 (1.11)	.000*
Negotiation	3.06 (.82)	3.29 (.86)	.053**
IV. Affect Regulation			
Expressiveness	3.12 (.80)	3.61 (.74)	.000*
Responsiveness	2.90 (.86)	3.54 (.88)	.000*
Positive Regard	3.30 (1.06)	3.57 (.92)	.076
Negative Regard	3.36 (1.03)	3.36 (.91)	1.00
Mood and Tone	3.14 (.70)	3.93 (.77)	.000*
Empathy	2.66 (.90)	3.11 (.83)	.001*
V. Disagreement/Conflict			
Frequency	3.78 (1.22)	3.11 (.96)	.000*
Affective Quality	4.00 (1.03)	3.39 (.79)	.000*
Generalization/Escalation	4.16 (1.02)	3.75 (.52)	.006*
Sum of Scales	57.94 (12.59)	68.25 (11.79)	.000*
Global Competence	9.10 (3.09)	11.12 (3.94)	.000*

Table 19

Summary of Normative Data for TCFES and Total ED Group at Baseline

Scale	ED Group (<u>n</u> =29) M (SD)	"Nonclinic"/Normal Controls (<u>n</u> =28) M (SD)	<u>P</u>
I. Structure			
Overt Power	3.14 (.92)	3.86 (.93)	< .001*
Adult Leadership	3.00 (1.10)	3.46 (1.07)	.033**
Inappropriate Parent Child Coalition	3.03 (1.12)	3.29 (.94)	.228
Closeness	3.31 (1.11)	3.64 (.87)	.119
II. Autonomy			
Clarity of Expression	3.17 (.89)	3.71 (.81)	.003*
Respect for Subjective Reality	3.14 (1.09)	3.50 (.79)	.085
Responsibility	2.79 (.86)	3.69 (.91)	< .001*
III. Problem Solving			
Closure	3.10 (1.14)	3.46 (1.11)	.105
Negotiation	3.24 (1.15)	3.29 (.86)	.822
IV. Affect Regulation			
Expressiveness	2.79 (.98)	3.61 (.74)	< .001*
Responsiveness	2.69 (.93)	3.54 (.88)	< .001*
Positive Regard	3.56 (.99)	3.57 (.92)	.921
Negative Regard	3.76 (1.33)	3.36 (.91)	.117
Mood and Tone	3.21 (.90)	3.93 (.77)	< .001*
Empathy	2.83 (.76)	3.11 (.83)	.055
V. Disagreement/Conflict			
Frequency	4.07 (1.25)	3.11 (.96)	< .001*
Affective Quality	4.41 (1.02)	3.39 (.79)	< .001*
Generalization/Escalation	4.38 (1.15)	3.75 (.52?)	.006*
Sum of Scales	59.59 (14.10)	68.25 (11.79)	.003*
Global Competence	9.99 (3.09)	11.12 (3.94)	< .001*

Table 20
Summary of Normative Data for TCFES and ED Depressed Group (N = 20)

Scale	ED Depressed Group (<u>n</u> =29) M (SD)	"Nonclinic" Sample (<u>n</u> =28) M (SD)	P
I. Structure			
Overt Power	3.20 (.95)	3.86 (.93)	.006*
Adult Leadership	3.15 (1.09)	3.46 (1.07)	.219
Inappropriate Parent Child Coalition	3.25 (1.07)	3.29 (.94)	.869
Closeness	3.25 (1.21)	3.64 (.87)	.165
II. Autonomy			
Clarity of Expression	3.15(.99)	3.71 (.81)	.020**
Respect for Subjective Reality	3.30 (1.08)	3.50 (.79)	.418
Responsibility	2.75 (.79)	3.69 (.91)	< .001*
III. Problem Solving			
Closure	3.20 (1.20)	3.46 (1.11)	.343
Negotiation	3.25 (1.16)	3.29 (.86)	.879
IV. Affect Regulation			
Expressiveness	2.90 (.97)	3.61 (.74)	.004*
Responsiveness	2.85 (.99)	3.54 (.88)	.006*
Positive Regard	3.60 (1.10)	3.57 (.92)	.904
Negative Regard	3.80 (1.28)	3.36 (.91)	.141
Mood and Tone	3.25 (.97)	3.93 (.77)	.005*
Empathy	3.00 (.73)	3.11 (.83)	.506
V. Disagreement/Conflict			
Frequency	4.15 (1.14)	3.11 (.96)	.001*
Affective Quality	4.46 (.76)	3.39 (.79)	< .001*
Generalization/Escalation	4.50 (1.00)	3.75 (.52)	.003*
Sum of Scales	61.20 (13.89)	68.25 (11.79)	.035**
Global Competence	10.45 (3.20)	11.12 (3.94)	.361

Table 21
Summary of Normative Data for TCFES and ED Non- Depressed Group

Scale	<u>ED Non-Depressed Group</u> (<u>n</u> =29) M (SD)	<u>Non-Clinic Sample</u> (<u>n</u> =28) M (SD)	<u>P</u>
I. Structure			
Overt Power	3.00 (.87)	3.86 (.93)	.018**
Adult Leadership	2.67 (1.12)	3.46 (1.07)	.066
Inappropriate Parent Child Coalition	2.56 (1.13)	3.29 (.94)	.087
Closeness	3.44 (.88)	3.64 (.87)	.525
II. Autonomy			
Clarity of Expression	3.22 (.67)	3.71 (.81)	.059
Respect for Subjective Reality	2.78 (1.09)	3.50 (.79)	.083
Responsibility	2.89 (1.05)	3.69 (.91)	.052**
III. Problem Solving			
Closure	2.89 (1.05)	3.46 (1.11)	.143
Negotiation	3.22 (1.20)	3.29 (.86)	.870
IV. Affect Regulation			
Expressiveness	2.56 (1.01)	3.61 (.74)	.014**
Responsiveness	2.33 (.71)	3.54 (.88)	.001*
Positive Regard	3.44 (.73)	3.57 (.92)	.618
Negative Regard	3.67 (1.50)	3.36 (.91)	.557
Mood and Tone	3.11 (.78)	3.93 (.77)	.014**
Empathy	2.44 (.73)	3.11 (.83)	.025**
V. Disagreement/Conflict			
Frequency	3.89 (1.25)	3.11 (.96)	.167
Affective Quality	4.11 (1.45)	3.39 (.79)	.175
Generalization/Escalation	4.11 (1.45)	3.75 (.52)	.477
Sum of Scales	56.00 (14.72)	68.25 (11.79)	.037**
Global Competence	9.10 (3.09)	11.12 (3.94)	< .001*

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VITAE

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