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An initial exploration of peer adjustment in adolescents with eating disorders.

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An Initial Exploration of Peer Adjustment in Adolescents with Eating Disorders

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Abstract

The purpose of this study was to examine the peer adjustment of adolescents with eating disorders (EDs). Participants were 75 adolescent females ranging from 12-18 years. Twenty-five had an ED, 25 had a depressive disorder (DD), and 25 had no history of mental health problems. Participants completed a series of questionnaires assessing their crowd affiliation, perceived peer acceptance, experiences with relational aggression and victimization, positive and negative qualities associated with their closest same-sex friendship, number of friends, levels of disordered eating in their peer group, loneliness, and social anxiety. Adolescents with ED and DD also completed a semi-structured diagnostic interview. Adolescents with comorbid ED and DD reported the most impaired peer adjustment, particularly with respect to feelings of loneliness. Adolescents with ED generally affiliated with average or high status crowds and had peer groups that were characterized by high levels of eating disordered thoughts and behaviors. Adolescents with anorexia nervosa (AN) were the only adolescents to report problematic close same-sex friendships. The peer adjustment of adolescents with AN or with comorbid ED and DD was most consistent with findings from research with clinical samples of individuals with ED. The peer adjustment of adolescents with eating disorder not otherwise specified and ED with no comorbid DD was most consistent with findings based on the risk factors research. Assessing the peer adjustment of adolescents with ED presenting for treatment may be useful. Future research is needed to examine the utility of interventions that target peer adjustment as an adjunct to treatment.

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INTRODUCTION

Eating disorders (ED) are disabling illnesses primarily affecting women. These disorders drastically impair the quality of life of those afflicted and are associated with cognitive impairments and medical complications such as osteoporosis and fertility problems (e.g., Kinder, 1997 and Ratnasuriya, Eisler, Szmuckler, & Russell, 1991). Furthermore, ED have one of the highest mortality rates of all the psychiatric disorders (Herzog, et al., 2000). Despite the severity of these concerns, individuals with ED are notoriously resistant to treatment (Vitousek, Watson, & Wilson, 1998) and treatment refusal, relapse, as well as illness chronicity are common phenomena associated with these disorders (Pike, 1998 and Mahon, 2000). Adolescence represents a period of risk for the development of ED and a shorter duration of illness has been shown to predict a more positive outcome (Hoek, & van Hoeken, 2000). Therefore it is crucial that our treatments address the concerns of younger individuals with ED in order to facilitate a quick and sustained recovery.

Peer relationships also become increasingly salient during adolescence (Larson, Richards, Moneta, Holmbeck, & Duckett, 1996; McCabe, Ricciardelli, & Finemore, 2002; Paxton, 1996) and problems in these relationships are related to maladaptive developmental outcomes. Theoretical models describing the etiology and maintenance of ED have often emphasized the role of impaired social adjustment (Striegel-Moore, Connor-Greene, & Shime, 1991), and treatment approaches that focus on resolving interpersonal problems have been explored (e.g., Agras, Walsh, Fairburn, Wilson, & Kraemer, 2000; Davies, 2004; McIntosh, Bulik, McKenzie, Luty, & Jordan, 2000). However, little research has examined peer adjustment in adolescents with ED

(Lieberman, Gauvin, Bukowski, & White, 2001). Instead, these models and approaches have largely been based on clinical experience or research with adults with ED where difficulties in social adjustment have been established. It is not known whether these impairments are a precursor to chronic ED, or whether difficulties in peer relationships develop as a result of prolonged eating disorder symptoms. In addition, given the developmental significance of friendships during adolescence and the differences between peer relations in adolescence and adulthood, the peer adjustment of adolescents with ED needs to be examined as this may lead to a better understanding of who develops chronic ED and inform treatments for this population.

ED categorized in the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR; American Psychiatric Association, 2000) include anorexia nervosa (AN), bulimia nervosa (BN), and eating disorder not otherwise specified (EDNOS). The primary characteristics of AN include restricted eating, severe weight loss, an intense fear of gaining weight, feelings of self-worth based on shape and weight, and amenorrhea (American Psychiatric Association, 2000). Individuals with BN also base their self-esteem on shape and weight; however, they are not necessarily underweight. BN is characterized by frequent binge eating followed by the use of compensatory behaviors such as vomiting, over exercising or abusing laxatives (American Psychiatric Association, 2000). Individuals with EDNOS display severe eating pathology, however, they do not meet the full diagnostic criteria for AN or BN (American Psychiatric Association, 2000; Fairburn & Bohn, 2005). Approximately 50% of children and adolescents presenting for outpatient or inpatient eating disorder treatment are diagnosed with EDNOS (Fisher et al., 2001; Muratori, et al., 2004; Nicholls, Carter, & Bryant-

Waugh, 2003). Adolescents with EDNOS or subclinical ED have been shown to report similar levels of secondary psychological distress as those adolescents who meet the diagnostic criteria for AN or BN (Bunnell, et al., 1990; Fairburn & Bohn, 2005). Given these findings, participants in the current study will include individuals with a diagnosis of AN, BN, or EDNOS.

The overall objective of this research is to examine peer adjustment in adolescents with ED. For the current research, the term peer adjustment will be used to encapsulate the following aspects of peer relationships during adolescence: peer crowd affiliation, perceived acceptance and victimization, number of friends, positive and negative qualities that characterize close friendships, characteristics of close friends, loneliness, and social anxiety. Using a cross-sectional design, the purpose of this research is to compare the peer adjustment of adolescents with ED to that of adolescents with depressive disorders (DD) and typically developing adolescents without current or past mental health problems.

Developmental psychopathology provides a theoretical framework for studying peer adjustment in adolescents with ED (Cicchetti, 1984; Cummings, et al., 2000). This framework highlights the importance of using developmentally appropriate constructs and measures. Within a developmental psychopathology framework, peer experiences can be broadly categorized into experiences within the larger peer system or group and close-friendships (La Greca & Harrison, 2005; Urberg, et al., 1995). Experiences involving the peer group include reputation-based peer crowd affiliation and perceived acceptance and rejection or victimization from peers. Experiences with close friendships include the number of close friends adolescents have, the qualities that characterize these

relationships, and the social support they perceive receiving from their close friends. Another aspect to consider in examining adolescents' close friendships involves the characteristics or behaviors of their close friends (La Greca & Harrison, 2005). Examples of areas that have been assessed include friends' emotional functioning and behaviors such as smoking, alcohol/drug use, and involvement in sexual activity (Prinstein, et al., 2003). The current research examines peer adjustment across adolescents' peer group and close friendships.

Peer Adjustment and ED

Peer adjustment has been studied extensively within normative samples of adolescents and considerable research has been conducted examining peer adjustment in relation to health-risk behaviors and internalizing (e.g., anxiety, depression, etc) and externalizing (e.g., ADHD, conduct disorder) psychopathology. Although few studies have examined peer adjustment in clinical sample of adolescents with ED, several related areas of research support the hypothesis that these adolescents may have difficulties in their peer relationships. In general, these areas of research have involved either adults with ED (e.g., Fairburn, Cooper, Doll, Norman, & O'Conner, 2000; O'Mahoney & Hollwey, 1995; Thompson & Schwartz, 1982) or risk-factors research with non-clinical samples of adolescents (e.g., Dunkley, Wertheim, & Paxton, 2001; Lieberman, Gauvin, Bukowski, & White, 2001; Schutz & Paxton, 2007). First, impairments in social adjustment and high levels of comorbidity with social anxiety are well documented in adults with ED (e.g., Bulik, 1995). Second, risk factors research suggests that there may be groups of adolescents that are characterized by high levels of disordered eating (e.g., Lieberman, Gauvin, Bukowski, & White, 2001).

Social Adjustment in Adults with ED

A substantial body of research has documented impairments in the overall social adjustment of adults with ED. Unfortunately, characteristics of this research limit the implications of this research for adolescents with ED. In many of these studies social functioning has been assessed using broad measures of social adjustment (e.g. Social Adjustment Scale; Weissman & Bothwell, 1976) that assess adjustment across social, family, work, marital, and leisure domains. Although these types of measures assess some aspects of peer relations, they do not allow for a comprehensive understanding of peer adjustment as conceptualized within the developmental psychopathology literature (Bukowski & Adams, 2005). For example, this research does not typically describe the number of friends in adults with ED peer group, the quality of their relationships, or their perceived acceptance. Little research with adults with ED has focused specifically on their peer relationships. Therefore, it is difficult to reach conclusions regarding the peer adjustment of adults' with ED based on this research.

Other studies that have examined social adjustment in individuals with ED have used assessment strategies developed for the purposes of the specific research project. This method of assessment is problematic because it is difficult to compare findings across studies, and the psychometric properties of these instruments have not usually been established (Stice, 2002). Despite these limitations, the research consistently reveals impairments in social adjustment in adults with ED and therefore suggests that problems in peer relationships may be common. In combination with the developmental significance of peer relationships during adolescence, future research is needed that examines peer adjustment in adolescents with ED (Dunkley, Wertheim, & Paxton, 2001;

Lieberman, et al., 2001). Before reviewing the scarce research that has examined peer adjustment and ED, the social adjustment literature will be reviewed.

Research has found that impairments in social adjustment are concurrently related to eating disorder symptoms in adult women (e.g., Fairburn, Cooper, Doll, Norman, & O'Conner, 2000; Flament, et al., 2001; Grissett & Norvell, 1992; Herzog, Keller, Lavori, & Ott, 1987; Herzog, Norman, Ricotti, & Pepose, 1986; Herzog, et al., 1985; O'Mahoney & Hollwey, 1995; Thompson & Schwartz, 1982). For instance, Johnson and Berndt (1983) found that in comparison to female controls matched for age, level of education, and socioeconomic status, women with BN reported greater levels of social maladjustment. Using the Social Adjustment Scale, Norman and Herzog (1984) reported that women with BN reported comparable levels of social maladjustment on the Social and Leisure subscale as did alcoholic and schizophrenic women, and greater maladjustment than acutely depressed women. Similarly, Thompson and Schwartz (1982) found that anorexic women had comparable Social Adjustment Scale scores to acutely depressed and schizophrenic patients. In one of the few studies to include individuals with AN and BN, 86% and 65% of participants with each diagnosis, respectively, met study criteria for a social disability (Flament, et al., 2001). With respect to causality, retrospective reports suggest that social maladjustment may have preceded the development of the eating disorder (Deep et al., 1995; Fairburn, et al., 1997, 1999; Flament, et al., 2001).

In addition to concurrent relationships between social maladjustment and eating disorder symptoms, poor social adjustment may be associated with the chronic nature of these disorders for some individuals (Keel, et al., 2000). Longitudinal research with a

community sample of women with BN found that greater social maladjustment was associated with persistence of symptoms over a 5 year follow-up period (Stice & Agras, 2003). Cross-sectional studies that have recruited patients treated for AN and BN years after discharge have found that a poor outcome at follow-up is associated with impairment in social adjustment (Casper, 1990; Reiss & Johnson-Sabine, 1995; Yager, Landsverk, Edelstein, & Jarvik, 1988). Together, this research suggests that social maladjustment may precede the onset of the eating disorder, be concurrently related to eating disorder symptoms, and be associated with the maintenance of these disorders.

Social adjustment has also been related to levels of symptom reduction over time (e.g., Steiger, et al., 1993; Keller, et al., 1992). Steiger et al. (1993) found that after controlling for initial eating disorder and psychiatric symptoms, pretreatment levels of social adjustment predicted unique variance in post treatment binging and vomiting, 19% and 13% respectively. In a naturalistic study, the number of "friends with whom a patient had regular contact and felt emotionally close to" (Keller, et al., 1992, p. 5) at the initial assessment predicted recovery from BN at 35 to 42 month follow-up assessment (Keller et al., 1992). In another study, self-reported difficulty trusting others at the onset of a 10 week group program for BN was related to dropping out of treatment (Blouin et al., 1995). Further research is needed to examine the relationship between social adjustment and symptom reduction in AN. Overall, better social adjustment may be related to responsiveness to treatment and recovery (Saccomani, et al., 1998, Steiger et al., 1993).

In comparison to women who have never had an eating disorder, impairments in social adjustment tend to persist for a significant portion of women who have had AN or

BN even after their eating disorder symptoms have remitted (e.g., Casper, 1990; Herzog et al., 1985; Keel et al., 2000; Norman & Herzog, 1986; Norman, et al., 1986; Rorty, et al., 1999; Saccomani, et al., 1998). With respect to BN, a study with female medical students reported that a history of BN was associated with current social maladjustment. In a 3-year follow-up study, women who had and had not recovered from their eating disorder had comparably poor levels of social adjustment (Norman & Herzog, 1986). Similarly, in a 10-year follow-up study, women in remission from BN and women engaging in disordered eating did not differ on overall adjustment or social/leisure adjustment (Keel, et al., 2000). Moreover, when these concerns were grouped together they reported greater maladjustment than a sample of women from the community (Keel, et al., 2000; Norman et al., 1986). With respect to AN, a series of follow-up studies with women with a history of adolescent onset AN have found that problems with social adjustment persist several years following the onset of their eating disorder, despite significant treatment, and in some cases even after recovery from the eating disorder (Casper, 1990; Herpertz-Dahlmann & Remschmidt, 1993; Saccomani et al., 1998; Steinhausen, Boyadjieva, Griogoroiu-Serbanescu, & Neumarker, 2003; Steinhaussen & Glanville, 1983; Stonehill & Crisp, 1977). However, in one study, a history of AN was not associated with current social maladjustment for female medical students (Herzog et al., 1985). Although this research suggests that social adjustment might improve with a reduction of eating disorder symptoms, even recovered individuals have poorer social adjustment in comparison to women with no reported history of an eating disorder.

Finally, social adjustment has also been implicated as a possible trigger for relapse following recovery from an eating disorder. In a qualitative study of women who

had recovered from BN, dealing with interpersonal relationships was reported as a trigger for relapse by 39% of the sample (Wasson, 2003). In a second qualitative study, participants were interviewed 6 months following discharge from intensive residential treatment for AN, BN, or EDNOS and asked to describe factors that had supported or hindered their efforts to sustain the changes they had made to their eating disorder symptoms. Connecting and obtaining support from family and friends was identified as helpful, whereas interpersonal conflicts were discussed as triggers for eating disorder behaviors (Cockell, et al., 2004). However, another study using a quantitative methodology reported that social adjustment was not related to relapse in BN (Olmsted, Kaplan, & Rockert, 1994). Thus, the role of social adjustment and relapse requires further investigation.

In summary, the social adjustment research suggests that social maladjustment is commonly associated with AN and BN. Moreover, although improvements in social adjustment may occur with recovery from the eating disorder, in comparison to women without a history of an eating disorder, recovered individuals (particularly those with a history of BN) still exhibit difficulties in social adjustment. Given that these impairments persist following recovery, it has been suggested that difficulties in social adjustment likely preceded the onset of the eating disorder, and retrospective reports provide preliminary support for this assertion. Finally, the role of difficulties in social adjustment in relapse following recovery has been supported in qualitative but not quantitative studies.

Overall, this research suggests that social maladjustment is common in adults with ED, and as such, impairments in peer relations are likely. However, ED typically have

their onset during adolescence, and there are a number of reasons why it is difficult to generalize findings from the adult literature on social adjustment to peer adjustment in adolescents with ED. First, from a developmental psychopathology perspective, peer adjustment is operationalized very differently than it has been in the social adjustment literature (Cummings et al., 2000). Although questions regarding peer relations are often incorporated into social adjustment scales, results from these questions are not typically described independently. Therefore, it is not possible to conclude that peer relations are necessarily impaired or to fully understand individuals with ED' experiences with their friends. In contrast, assessing peer adjustment from a developmental psychopathology perspective involves specifically examining numerous characteristics and levels of adolescents' peer relationships (La Greca & Harrison, 2005).

A second reason it is difficult to generalize findings from the adult social adjustment literature to adolescents with ED is that the causal relations between difficulties in social adjustment and eating disorder symptoms have not been established. That is, it is not known whether problems in social adjustment lead to eating disorder symptoms or whether having an eating disorder leads to problems in social adjustment. If the latter is true and having an eating disorder causes impairments in social adjustment, peer adjustment in adolescents with ED will differ from adults' because adolescents generally report a shorter duration of illness and therefore impairments in social adjustment may not yet have developed (e.g., Zonnevylle-Bender, et al., 2004). From a developmental psychopathology perspective, it is most likely that the association is bi-directional (Cummings et al., 2000). Thus, studying peer adjustment in adolescents with ED could help to develop a more comprehensive theory of the etiology and maintenance

of these disorders. Some research with at-risk populations examining peer adjustment and eating disorder symptomatology has been conducted. Each of these areas will be reviewed below.

Social Anxiety

In addition to the research suggesting impairments in overall social adjustment in women with ED, several studies have examined social anxiety in adults with AN and BN (e.g., Hinrichsen, Waller, & Van Gerko, 2004; Striegel-Moore, Silberstein, & Rodin, 1993) and high levels of comorbidity between these disorders have been reported (see Bulik, 1995 for a review). Moreover, the severity of social anxiety reported by women with ED may be as intense as that found in women with social phobia (Bulik, Beidel, Duchmann, Weltzin, & Kaye, 1991). Retrospective reports suggest that social anxiety typically predates the eating disorder (Deep, et al., 1995; Godart, Flament, Lecrubier, & Jeammet, 2000). Finally, symptoms of social anxiety may persist after individuals with AN achieve a normal weight (Deep, et al., 1995; Stonehill & Crisp, 1977).

The construct of social anxiety has been operationalized as consisting of two components: the fear of negative evaluation from others and avoidance and distress regarding social situations. Although this model of social anxiety was originally developed from research with adults, studies with children and adolescents support this division (La Greca & Lopez, 1998; Vernberg, et al., 1992). For children and adolescents the social avoidance component has been further differentiated into social avoidance of new situations and a general avoidance of situations that involve peers (La Greca & Lopez, 1998).

Gender differences in social anxiety have been reported (La Greca & Lopez, 1998; La Greca & Stone, 1993). In non-clinical samples, in comparison to adolescent boys, adolescent girls report higher levels of social anxiety, particularly with respect to fears of negative evaluation (La Greca & Lopez, 1998; Vernberg et al., 1992). Given the disproportionate numbers of females rather than males with ED it follows that this component of social anxiety also has been the focus of research attention in adults with ED (e.g., Bulik, 1995; Gilbert & Meyer, 2003; Hinrichsen, Wright, Waller, & Meyer, 2003; McClintock & Evans, 2001).

Preliminary data suggest that within clinical populations the fear of negative evaluation may be related to eating disorder symptoms (e.g., Crisp & Baht, 1982; Gilbert & Meyer, 2003; Hinrichsen et al., 2003) and within non-clinical samples it may be a risk factor for the development of disordered eating (Gilbert & Meyer, 2005). A longitudinal study with college women revealed that the fear of negative evaluation from others predicted increases in restriction but not bingeing or purging (Gilbert & Meyer, 2005). In order to provide a more comprehensive understanding of the links between components of social anxiety and eating disorder symptomatology, further research examining associations between components of social anxiety, different eating disorder symptom presentations, and symptom severity is needed. This understanding could have important implications for clinical work with adolescents with ED.

Social anxiety may be particularly detrimental for adolescents because forming intimate relationships is a central developmental task during adolescence (Berndt, 1982; Inderbitzen, et al., 1997). However, research examining social anxiety in children and adolescents is in its early stages (Rao, et al., 2007). Given the limited research on social

anxiety in adolescence, it is not surprising that very few studies have examined social anxiety in adolescents with ED. Retrospective reports from adults who have recovered from AN suggest rates of social phobia during childhood that are higher than those found in community samples (Deep, et al., 1995). In one study of adolescents with AN, 12% of participants met DSM-IV diagnostic criteria for social phobia (Zonnevylle-Bender, et al., 2004). In a non-clinical sample of adolescents Schutz and Paxton (2007) found that social anxiety was positively correlated with body dissatisfaction and engaging in extreme weight loss behaviors such as laxative use, fasting, and self-induced vomiting. However, after controlling for depressive symptoms the association lessened, particularly for engaging in extreme weight loss behaviors.

Overall, the research on social anxiety and eating pathology suggests that anxiety in social situations may be present before the onset of the eating disorder. However, studies were not found that examined how social anxiety relates to different aspects of peer adjustment in adolescents with ED. Given the high comorbidity found between social anxiety and ED in adults, and the potential for social anxiety to impact developmental tasks associated with adolescence, research in this area is needed. Findings from Schutz & Paxton (2007) suggest that examining the impact of depressive symptoms on the relation between social anxiety and eating disorder symptoms is also important. Understanding these associations could be helpful in interventions with this group (La Greca, 1997).

Experiences with the Peer Group and ED

As stated earlier, within a developmental psychopathology perspective peer adjustment during adolescence is conceptualized as occurring on a number of levels

including general peer group relations and acceptance and close friendships. Moreover, both positive and negative features of these peer relations should be assessed as both can be related to differing developmental trajectories. Although research has been conducted in some areas of peer adjustment in relation to eating disorder symptoms, it has typically relied on adult populations or normative samples of high school students. A review of the literature resulted in no studies that comprehensively examined peer adjustment in a clinical sample of adolescents with ED. In order to guide hypotheses in the current study, the research that has been conducted with adult and at-risk adolescent populations at each of these levels of peer adjustment will be reviewed. Where possible, research that has used clinical samples of adolescents will be highlighted.

Peer Crowd Affiliation

Adolescents are typically perceived by their peers as belonging to reputation based crowds. Peer *crowds* are defined as "reputation-based groups or crowds of adolescents who do not necessarily affiliate with one another and yet are presumed to share similar values, attitudes, and behaviors" (Prinstein & La Greca, 2002, p.325). Crowds that have been identified include "Jocks" or "Athletes" (i.e., athletically oriented adolescents), "Populars or Preps" (i.e., high status, image-oriented groups), "Burnouts, Dirts, or Drugies" (i.e., deviant or rule-breaking crowds), "Alternatives" (e.g., do not conform to social ideals), "Brains" (i.e., adolescents perceived as academically focused), "Loners" (i.e., adolescents who are perceived as spending a lot of time alone or not fitting in), and "None/Average" (i.e., no affiliation, or "just average"; La Greca & Harrison, 2005; La Greca, Prinstein, & Fetter, 2001; Prinstein, et al., 2001). Research suggests that Populars and Jocks are viewed as high-status peer crowds whereas Burnouts,

Alternatives, and Loners are viewed as low-status peer crowds. The validity of these reputation based crowds has been supported by research showing that the majority of teens endorse belonging to average status crowds (Prinstein & La Greca, 2002) and perceived crowd affiliation is related to different self-reported emotional and/or behavioral characteristics (e.g., Hartup & Abecassis, 2002; Prinstein & La Greca, 2002). For instance, adolescents associated with low status crowds have been shown to engage in more illegal behaviors (e.g., drug use, stealing) than adolescents associated with average or high status crowds (La Greca, et al., 2001; Urberg, et al., 2000). Similarly, having a higher grade point average was related to being perceived as belonging to the "Brains" crowd (Urberg, et al., 2000). With respect to methods of assessing peer crowd affiliation, adolescent self-reports and peer nominations are highly correlated (Sussman, et al., 1990; Urberg, et al., 2000). Therefore, both methods are viewed as acceptable methods of assessing peer crowd affiliation (La Greca, et al., 2001; Sussman, et al., 1990; Urberg, et al., 2000).

Recent research has shown that adolescents with emotional and/or behavioral problems are typically perceived by their peers as affiliating with lower status groups (Prinstein & La Greca, 2002). In contrast, though not examined directly, there is some preliminary research suggesting that high school students who report engaging in eating disorder behaviors may be perceived as affiliating with "popular" or "average" crowds (Lieberman, et al., 2001; Nichter & Vukovic, 1994; Thompson & Schwartz, 1982). During qualitative interviews adolescents reported that thinness is a characteristic associated with popular girls, and that talking about dieting and body dissatisfaction is one way to promote group affiliation (Nichter & Vukovic, 1994). However, no studies

have directly assessed peer crowd affiliation in adolescents with ED. The normative nature of body dissatisfaction and dieting in adolescent females (Stice, 2002) could explain why adolescents with disordered eating may be perceived as belonging to average or even high status crowds, whereas adolescents with other emotional and/or behavioral problems such as depression or aggression are perceived as affiliating with lower status groups.

Perceived Acceptance

Unlike peer affiliation, which is based on others' perceptions of individuals' peer crowd affiliation, perceived acceptance has been defined as an individual's appraisal of the extent to which they feel accepted by their friends and a larger system of peers (Newcomb, Bukowski, & Pattee, 1993). Therefore, one could be perceived as affiliating with a high status crowd and yet still feel relatively unaccepted by one's peer group (Nangle, et al., 2003). Using the Harter Self-Perception Profile for Adolescents (Harter, 1988), Kuttler and colleagues (1999) reported that lower social acceptance scores were related to greater internalizing symptoms (including feelings of loneliness, low self-esteem, anxiety, depression, etc). Using the Perceived Acceptance Scale, Brock, et al., (1998) found that in a sample of older adolescents (mean age=19.1 years) perceived acceptance from friends predicted small amounts of unique variance in loneliness and self-esteem scores (4% and 14%, respectively) after controlling for gender, social support from friends and family, and perceived acceptance from family.

It has been shown that a portion of children and adolescents believe that enhancing their appearance may be one way of enhancing acceptance from peers (Stice, 2002). More specifically, research has found that a portion of children and adolescents

believe that lowering their weight will enhance their popularity with both same and opposite sex peers (Lieberman, et al., 2001; Oliver & Thelen, 1996; Phares, Steinberg, & Thompson, 2004; Wardle & Watters, 2004). For example, in a study of 9 and 11 year old girls, one fourth of participants reported that they believed others would like them more if they lost weight (Wardle & Watters, 2004). However, adolescents in other studies have reported that in general thinness will not lead to an increase in number of friends (Nichter & Vukovic, 1994, Paxton, et al., 1991). It may be that feeling dissatisfied with one's body and engaging in eating disordered behavior is related to a desire for greater peer acceptance. Therefore, it may be that adolescents at risk for ED, or those who are engaging in disordered eating feel that lowering their weight will increase peer acceptance.

No studies were found that examined perceived peer acceptance in adolescents with ED. Findings from non-clinical samples are mixed, and varied depending on the specific thoughts or behaviors assessed. In one study, higher acceptance from the larger peer system was related to greater body dissatisfaction (McCabe, Ricciardellie, & Finemore, 2002) whereas this relation was not significant in other studies (Gerner & Wilson, 2005; Paxton, Schutz, Wertheim, & Muir., 1999; Schutz & Paxton, 2007). Engaging in extreme weight loss behaviors such as fasting and vomiting was positively related to perceived acceptance in one study even after controlling for BMI, depression, self-esteem, anxiety, family support, parent pressure to be thin, and media pressure to be thin (Paxton, et al., 1999). However, the association was not significant in another study (Schutz & Paxton, 2007). Univariate correlations between perceived acceptance and dietary restraint were not significant in several studies (Gerner & Wilson, 2005; Paxton,

et al., 1999; Schutz & Paxton, 2007). After controlling for depressive symptoms, Schutz & Paxton (2007) reported a negative relationship between perceived acceptance and dietary restriction. Suggesting that after controlling for depression adolescents who engage in greater dietary restriction feel less accepted by their peers. Across studies, binge eating was not significantly related to perceived acceptance (Paxton, et al., 1999; Schutz & Paxton, 2007).

Overall, adolescents have described weight loss as a possible mechanism for increasing acceptance (Nichter & Vukovic, 1994, Paxton, et al., 1991). Although the relations are weak, they suggest that feeling more accepted by peers may be associated with greater body dissatisfaction and extreme weight loss behaviors in high school students, but that lower acceptance may be associated with restricted eating. Thus, attempts to lose weight through dietary restriction might be common amongst adolescents who do not feel highly accepted. However, there are methodological limitations associated with the peer acceptance research conducted to date. In two of these studies (Gerner & Wilson, 2005; Paxton, et al., 1999) perceived acceptance was assessed with single items developed for use in the Paxton et al. (1999) study, and the limited psychometric data for these items was discussed as a possible limitation. Further studies are needed that use psychometrically established measures of peer acceptance as this would help clarify the relations between perceived acceptance and eating disorder symptoms. In addition, research with clinical samples of adolescents with ED is needed, and the association between symptom presentation (e.g., adolescents who do and do not engage in purging behaviors) and perceived acceptance should also be examined.

Relational Aggression & Victimization

At the opposite end of the spectrum from acceptance or being liked by the peer system is rejection and victimization. *Overt aggression* "includes acts that are meant to harm a peer physically, [and] *relational aggression* uses a child's relationship with another teen, or their friendship status, as a way of inflicting social harm" (Prinstein, Boergers, & Vernberg, 2001, p.479). Spreading rumors, gossiping, and excluding adolescents from activities are examples of relational aggression. Research also suggests that experiences with overt and/or relational aggression within peer relationships is related to heightened loneliness, social anxiety, and depressed affect (Crick & Bigbee, 1998; La Greca & Harrison, 2005; Prinstein, et al., 2001; Underwood, 2003; Vernberg, 1990; Vernberg, Abwender, Ewell, & Beery, 1992). Although relational victimization represents an extreme form of peer acceptance or lack thereof, it may be particularly important in understanding the associations between adolescent girls' peer adjustment and internal distress.

Two studies examined the association between aggression and victimization in peer relationships and eating disorder symptoms. In the first, within sororities higher peer nominations for relationally aggressive behavior were positively related to self-reported bulimic behaviors but were not related to concerns about weight or dietary restriction (Werner & Crick, 1999). Using self-reports, the second study included a large sample of adolescents and assessed the relations between being a victim or a perpetrator of bullying and symptoms of anorexia and bulimia. Among girls, symptoms of AN were related to having been both a bully and a victim of bullying (Kaltiala-Heino, Rimpelä, Rantanen, Rimpelä, 2000). In contrast to the Werner & Crick (1999) study, symptoms of

bulimia were not related to bullying or victimization. However, this study did not distinguish between relational and overt aggression (Kaltiala-Heino, et al., 2000). In both studies being the perpetrator of aggression was related to eating disorder symptoms. Therefore, future research should assess the possibility that adolescents with ED are both themselves relationally aggressive and the victims of aggression. Given the salience of relational aggression for adolescent girls, the need for future research on the linkages between relational aggression and emotional problems that are more common among females rather than males has been highlighted (Underwood, 2003). Furthermore, experiences with relational aggression in eating disorder populations needs to be examined as preliminary research suggests that this may an important experience for adolescents with ED.

Experiences within Close Friendships and ED

Peer crowd affiliation and peer acceptance are aspects of peer adjustment involving the larger peer group, and problems in either or both areas have been related to emotional and behavioral adjustment. In addition to these peer group variables, the number of close friends adolescents report having, the quality of these friendships, and the behavioral and attitudinal characteristics of close friends have also been found to be related to emotional and behavioral adjustment (e.g., Berndt, 1996; Claes, 1992, 1994; Paxton, et al., 1999).

Number of Friends

The developmental significance of the quantity of friendships has been examined in two ways. Research has either categorized adolescents as having or not having a close friend, or has used a continuous measure examining the actual number of friends reported

(Newcomb & Bagwell, 1995). However, very few adolescents report that they have no intimate friendships. In a study of 349 Canadian high school students, only 3 participants reported that they have no intimate friends (Claes, 1992). Thus, it may be that having no close friendships is indicative of severely impaired peer adjustment. One study using a clinical sample revealed that young adolescents (12-14 years) in treatment for a psychological disorder did not differ from adolescents recruited from the community on the number of intimate friendships they reported. In contrast, in comparison to peers in the community, older adolescents (15 to 17 years) in treatment for a psychological disorder reported significantly fewer intimate friendships (Claes, 1994).

Studies suggest that in comparison to women without an eating disorder, adults with AN and BN have fewer close friendships (Keller, et al., 1992; Tiller, et al., 1997; Weiss & Ebert, 1983). Research suggests that the number of close friendships these women report having is clinically meaningful. For instance, in one study the number of friends with whom women with BN reported feeling emotionally close predicted recovery (Keller, et al., 1992). Retrospective reports from adults with anorexia and BN have revealed that in comparison to non eating disordered women, significantly more women with ED reported having no close friends during their childhood (Fairburn et al., 1997, 1999). Moreover, in comparison to women with other psychiatric disorders, significantly more women with AN reported having no close friends during childhood (Fairburn, et al., 1999). In combination, these studies suggest that adolescents with ED may have fewer close friends than adolescents without ED. However, given the potential for bias associated with retrospective reports, the number of close friends of adolescents with ED needs to be empirically examined.

Friendship Quality

In addition to the number of friends that adolescents report having, the quality of close friendships has also been found to relate to emotional and behavioral outcomes. Furthermore, consideration of both the positive and negative qualities of these friendships is important. Positive qualities generally include intimacy, companionship, help, support, trust, and closeness (Bukowski, et al., 1994; Furman & Buhrmester, 1985; Parker & Asher, 1993; Sharabany, Gerhoni, & Hofman, 1981). Negative qualities generally include amount of pressure, conflict, conflict resolution, and power dynamics (Bukowski, et al., 1994; Furman & Buhrmester, 1985; Parker & Asher, 1993; Sharabany, et al., 1981). Because the positive and negative qualities of adolescents' relationships have been shown to be relatively independent of each other, some adolescents have close friendships that are characterized by high levels of both positive and negative qualities (Berndt & Perry, 1986; Brengden, et al., 2001; Furman, 1996). Moreover, Berndt (1996) suggested that relative to the positive qualities associated with adolescents' close friendships, the negative qualities may have greater developmental significance.

Two types of research suggest that typically developing adolescents provide meaningful and valid self-reports regarding the quality of their close same-sex friendships. First, studies reveal high correlations between data regarding the quality of friendships obtained from observing the behavior and interactions between friends and adolescents' self-reports of the quality of their relationships (e.g., Brengden, et al., 2001; Gavin & Furman, 1996). For instance, in one observational study, adolescent girls who rated the quality of their friendship as satisfying showed more positive affect and a balance of power with their friend, and less jealousy-related behavior (Gavin & Furman,

1996). Second, self-reported relationship quality has been shown to relate to a number of different indices of adjustment (La Greca, 1997). Adolescents with high quality friendships have been found to adapt better to normative school changes (Berndt, Hawkins, & Jiao, 1999; Berndt & Keefe, 1995). In addition, having close friends may reduce the detrimental impact of low peer acceptance (Buhrmester, 1990; Sullivan, 1953).

With regard to psychological adjustment, few studies have examined the qualities that characterize friendships in clinical samples of adolescents. In one study, comparisons were made between the friendships of adolescents referred for treatment for various psychological problems and adolescents recruited from a high school (Claes, 1994). Although the clinical group reported that the duration of their friendship with their closest friend was shorter than the duration of high school students' closest friendship, there was no significant difference reported in the overall level of intimacy of friendships between the two groups. However, in comparison to the high school students, the referred adolescents indicated less trust in their friends, lower levels of communication, and greater conflict (Claes, 1994). In addition, different patterns were found between the clinical and high school groups with respect to the level of conflict across the age of participants. For the high school students, the amount of conflict in close friendships was lower for the older age group (15- to 17-year-olds) than the younger age group (12- to 14-years-olds). The reverse was true for the clinical group where the amount of conflict was greater for the older age group than for the younger age group (Claes, 1994). In a second study with a clinical sample, levels of social adjustment with friends were assessed for adolescents with major depression who were enrolled in a

clinical trial examining the efficacy of interpersonal therapy (Mufson, Weissman, Moreau, & Garfinkel, 1999). Along with greater reductions in depressive symptoms in comparison to adolescents in the control group, adolescents in the treatment condition reported greater improvements in functioning with their friends. However, given that interpersonal therapy addresses problems in relationships it is not clear from this study whether the improvements in these adolescents' relationships were due to decreases in depressive symptoms or increases in interpersonal skills (Mufson, et al., 1999). Together, these studies suggest friendships of adolescents with psychological disorders may differ from those of adolescents without a psychological disorder.

Women interviewed following recovery from BN reported that avoidance of intimacy and closeness due to their fear of rejection or negative expectancies of others was related to relapse (Wasson, 2003). In addition, having close friends was predictive of recovery from BN (Herzog, et al., 1992). With respect to best friends, in comparison to university students, fewer patients with ED were able to identify a best or second best friend (Tiller et, al. 1997). These studies suggest that at least a subset of individuals with ED experience deficits in their close friendships.

In comparison to studies with clinical samples, studies that have recruited participants from high schools and undergraduate populations report somewhat different results with regard to the quality of their same-sex friendships. Two studies with female undergraduate students reporting clinical levels of symptoms of bulimia failed to find an association between the quality of participants' close friendships and bulimic symptom severity (Grissett & Norvell, 1992; Thelen, Farmer, Mann, & Pruitt, 1990). Similarly, a study with high school students reported that dieters and non-dieters endorsed

comparable levels of satisfaction with same-sex relations (Vincent & McCabe, 2000). In a second study with high school students, the positive qualities of girls' same-sex friendships were not significantly related to level of body dissatisfaction or bulimic behaviors (Schutz & Paxton, 2007). Thus, studies that have recruited participants who had received treatment for their eating disorder report relations between the quality of close friendships and eating disorder symptoms, whereas studies with non-clinical samples have not. Therefore, the presence or absence of positive qualities in one's close peer relationships may be related to seeking treatment for an eating disorder or symptom severity. However, only some of these studies examined the positive qualities of peer relations directly. Moreover, few of these studies used established measures to assess the quality of the relationships, and none of the reviewed studies involved adolescents with ED. Therefore, it is largely not known whether adolescents with ED would report having intimate relationships with their close friends.

In contrast to the limited research on the positive qualities of friendships in individuals with ED, there is relatively more research suggesting that their close friendships may have elevated negative qualities. In particular, difficulties coping with conflict in friendships may be particularly problematic for individuals with ED. These difficulties coping with conflict with peers have been reported in studies with adult clinical samples (McFall, Eason, Edmondson, & Treat, 1999; Wasson, 2003). For instance, women who had recovered from BN reported that difficulties coping with conflict and anger with friends triggered relapse (Wasson, 2003). Similarly, in comparison to women reporting eating disorder symptoms that do not meet criteria for a diagnosis, women with AN and BN reported less competence dealing with peer conflict

with females (McFall, et al., 1999). In comparison to undergrads, undergraduate females with clinically significant levels of symptoms of bulimia reported greater negative interactions and conflict. These differences remained significant even after statistically controlling for overall psychopathology as assessed by a broad measure of psychiatric symptoms (Grissett & Norvell, 1992). However, the interactions assessed in this study included relations with family members and friends. Therefore, it is not clear whether the differences reported were related to greater conflict with family, friends, or both. Research confederates who were not aware of participants' levels of disordered eating interacted with each woman in this study for five minutes. In comparison to women without an eating disorder, women with BN were rated as less socially effective, less trustworthy leaders, worse at problem solving, poorer team members, less skilled in social interaction, and less likely to be a good friend (Grissett & Norvell, 1992).

Research with at-risk adolescents also suggests elevated negative qualities in the close friendships of girls who are dissatisfied with their bodies and engage in disordered eating. In one study, difficulty expressing conflict with peers was related to greater symptoms of BN (Pike, 1995). In fact, problematic peer relations were more predictive of bulimic symptoms than dissatisfaction with the cohesiveness of one's family (Pike, 1995). Schutz and Paxton (2007) also reported significant positive associations between feelings of alienation and conflict in friendships and body dissatisfaction, dietary restraint, bulimic symptoms, and engaging in extreme weight loss behaviors. However, the only association that remained significant after accounting for depressive symptoms was between feelings of alienation and bulimic symptoms. Taken together, these findings

suggest that the close same-sex friendships of adolescents with ED may be characterized by negative interactions and difficulties expressing conflict.

It is not clear from the research conducted to date whether individuals with ED actually have more negative interactions with others, or if they perceive interactions more negatively than women without ED. Research suggests that individuals with eating disorder may have a tendency to be hypersensitive to interpersonal interactions (Atlas, 2004; Steiger, et al., 1999). For example, using an experience sampling method, Steiger and colleagues (1999) reported that in comparison to women without BN, women with BN reported greater fluctuations in their self-concept in relation to negative social interactions. Similarly, a second study with female undergraduates reported that greater sensitivity to rejection and criticism was related to a greater interest in dieting and thinness. However, in this study sensitivity to rejection and criticism were not related to symptoms of bulimia (Atlas, 2004).

Few studies have examined the role of social support from peers in the development and maintenance of ED. In comparison to controls, women with ED are more likely to rely on family-oriented support than on peer support (Tiller et al., 1997). In a study with undergraduate students, higher self-reported symptoms of bulimia were related to less perceived support from friends. In a second longitudinal study with high school students, social support from parents and pressure to be thin from parents did not predict changes in body dissatisfaction (Presnell, Bearman, & Stice, 2004). Greater pressure from peers to be thin was predictive of increases in body dissatisfaction. Therefore, the authors suggest that future research examine the role of social support from friends in relation to body dissatisfaction (Presnell, et al., 2004). Similarly, Paxton

et al., (1999) reported that support from family did not predict unique variance in dietary restraint or body dissatisfaction. However, peer support predicted variance in extreme weight-loss behaviors such as self-induced vomiting and fasting (Paxton, et al., 2002) such that greater peer support was related to higher levels of extreme weight loss behaviors. Thus, both studies with high school students failed to find a significant association between family support and body dissatisfaction and disordered eating (Paxton, Schutz, Wertheim, & Muir, 1999; Presnell, Bearman, & Stice, 2004). This is in contrast to research with adults with ED where associations between family support and eating disorder symptoms have been established (Tiller et al., 1997). These different relations could be explained by a number of different factors. Possibly, differences in support from family members could distinguish clinical and at-risk populations. Alternatively, the central role of peers during adolescence could make support from friends rather than parents more vital during this stage of life. However, higher levels of support were associated with more disordered eating in one of these studies (Paxton et al., 1999) and also in this study friends' eating pathology was highly correlated. Therefore, adolescents in this study may be supporting each other in their weight loss efforts. This is similar to a study that found adolescent girls with depressive symptoms who engage in co-rumination with their friends also rate their friendships high in levels of intimacy (Rose, 2002). These findings highlight the complexity of the relations between peer adjustment and adolescents' developmental trajectories.

Behavioral Characteristics of Friendship Network

In addition to examining the positive and negative qualities that characterize adolescents' close friendships, research suggests that it is also important to assess the

behaviors and characteristics of the peers who are in adolescents' friendship network. In contrast to peer crowds which are reputation based, peer networks or cliques consist of groups of adolescents who spend time with each other and identify one another as friends (Urberg, et al., 1995; Shrum & Cheek, 1987). When adolescents' peer groups are characterized by high levels of risky behavior and externalizing or internalizing problems, adolescents engage in similar behaviors and experience elevations in psychological symptoms (Dishion, Andrews, & Crosby, 1995; Prinstein, et al., 2001). The quality of adolescents' peer relations has been shown to impact the extent to which adolescents are pressured to engage in risky behaviors by their peers. Most studies have found that in comparison to low quality friendships, high quality friendships are more influential (e.g., Brendgen, et al., 2001; Urberg, Luo, Pilgrim, & Degirmencioglu, 2003). For example, Urberg and colleagues (2003) found that adolescents with high-quality friendships were more likely to be similar with regard to substance use.

Research has investigated the potential for the level of eating disorder symptoms and body image concerns of adolescents' peer networks to act as a source of risk for the development of disordered eating (e.g., Clark & Tiggemann, 2007; Jones, Vigfusdottir, & Lee, 2004; Levine et al., 1994; Muris, et al., 2005; Pauls & Daniels, 2000; Paxton, et al., 1999; Reel & Gill, 1996; Schutz & Paxton, 2007; Shroff & Thompson, 2006). This research has primarily been conducted with nonclinical samples. Correlational research has demonstrated similarities between friends' levels of dieting behaviors, bulimic symptoms, body dissatisfaction, and desire to lose weight (e.g., Allison & Park, 2004; Lieberman, et al., 2001; Paxton, et al., 1999; Pike, 1995). For example, in a study of friendship cliques, the average attitudes of the group with respect to shape and weight

variables predicted the body image concerns and dieting behaviors of individuals within the group (Paxton, et al., 1999). In comparison to members of cliques with low levels of body image concerns and disordered eating, girls who were members of cliques that were characterized by high levels of body image concerns and disordered eating reported that they spent more time with friends discussing dieting and weight concerns (Paxton, et al., 1999). Similarly, in comparison to same age peers without an eating disorder, high school students who reported eating disorder symptoms were more likely to have reported knowing someone else with an eating disorder (Pike, 1995; Tylka, 2004). Furthermore, the association between eating disorder symptoms and friends' concerns about weight (including dieting and talking about weight and shape) was one of the few correlations that remained significant after controlling for depressive symptoms in Schutz and Paxton's (2007) study.

Shroff and Thompson (2006) found that amongst reciprocated friends (i.e., both adolescents anonymously nominated the other as a friend) ED thoughts and behaviors were not related. However, they acknowledged that these results may have been limited by the size and representativeness of the sample used in these analyses. Specifically, a large portion of participants in their sample were excluded from these analyses because they either had friends outside the classroom who were not included in the study, nominated non-reciprocated friends, or did not indicate code numbers associated with their nominations (Shroff & Thompson, 2006). Similar to previous work, using their entire sample, Shroff & Thompson, 2006 found a positive relation between adolescents' body dissatisfaction and eating disturbance, and their reports of how much their friends valued appearance and talked about dieting and weight loss. In addition, body mass

index scores (BMI) amongst friends were positively related, and adolescents' BMI influenced the extent to which their friends talked about dieting, shape, and weight issues. Specifically, having a higher BMI was related to receiving fewer *anti*-dieting messages and having a lower BMI was related to engaging in more conversations about dieting and appearance. This suggests that the average weight of adolescents' peer group may influence the extent to which conversations about shape, weight, and weight loss behaviors occur such that these conversations may occur more amongst lower weight groups. Overall, cross-sectional research suggests similarities between friends' thoughts and feelings about their bodies and weight loss behaviors.

When friends report similar thoughts or behaviors at one point in time it raises the question as to whether these individuals became friends because of the similarity (e.g., through selection) or did they become more alike as their friendship developed (e.g., through socialization; Zalta & Keel, 2006). Two longitudinal studies with female college students reported that friends eating pathology became more similar over time (Crandall, 1988; Zalta & Keel, 2006). These studies suggested that clusters of peers with similar eating pathology may be a result of peers becoming more similar over time and not a result of people selecting friends who have similar eating attitudes and behaviors (Crandall, 1988; Zalta & Keel, 2006). Meyer and Waller (2001) reported that bulimic behaviors of college roommates became increasingly divergent over time, where as their drive to lose weight and body dissatisfaction became increasingly congruent. A recent large longitudinal study reported that cross-sectionally there were clusters of people who were obese, but also that over time a person's chances of becoming overweight increased dramatically if they had a friend who became overweight during a given interval of time

(Christakis & Fowler, 2007). Together these longitudinal studies suggest that that both selection and socialization likely occur but that socialization may be particularly important.

In general, these findings suggest that there may be groups of adolescents that are characterized by a focus on dieting, shape, and weight issues, and that friends have similar BMIs. Amongst adolescents having an average BMI may increase the likelihood that your friends focus on shape and weight, talk about dieting, and engage in weight loss behaviors. However, it is not clear from this research whether adolescent girls with clinically diagnosed ED have friends with elevated eating disorder symptomatology as adolescents seem to be sensitive to their friends' weight problems (e.g., overweight). Similar to findings with overweight adolescents, friends of adolescents with ED who are extremely underweight might also limit the extent to which they talk about appearance and engage in weight loss behaviors.

Loneliness and ED

Loneliness has been defined as a negative or unpleasant subjective experience related to problems with either the quantity or quality of social relationships (Uruk & Demir, 2003; Peplau & Perlman, 1984). Within high school students, deficits in many of the aforementioned dimensions of peer adjustment have been related to higher levels of loneliness (Uruk & Demir, 2003). For instance, feelings of loneliness have been related to lower peer acceptance (Sletta, Valas, Skaalvik, & Sobstad, 1996), less satisfaction and intimacy with same and opposite-sex friends (Chelune 1980; Uruk & Demir, 2003), and lower levels of social support (Mahon, Yarcheski, Yarcheski, 2004).

Loneliness is of clinical relevance as it has been related to higher levels of depression, anxiety, feelings of hopelessness, and alienation (e.g., Horowitz & French, 1979; Russell, Peplau, & Cutrona, 1980; Russell, Peplau, & Ferguson, 1978) as well as lower levels of positive health practices (Mahon, et al., 2004). Higher levels of loneliness have been found in adolescents compared with any other age group (Brage & Meredith, 1993; deJong-Gierveld, 1987; Medora & Woodward, 1986; Peplau & Perlman, 1982) and it has been hypothesized that this is related to the centrality of peer relations during this stage of development (Uruk & Demir, 2003). Thus, examining adolescents' feelings of loneliness could be an important component of understanding their overall peer adjustment.

Research indicates that individuals with ED report feeling dissatisfied with their interpersonal relationships. It follows that in comparison to women without ED, women with ED often report elevated levels of loneliness (Johnson & Larson, 1982; O'Mahony & Hollwey, 1995). In addition to concurrent associations, several retrospective reports from individuals with anorexia and BN indicate that feelings of loneliness were present during their childhood (Fairburn, et al., 1997, 1999; Karwautz, et al., 2001; Troop & Bifulco, 2002).

Despite these retrospective reports suggesting that adults with ED often experience loneliness during childhood, no studies were found that directly assessed loneliness in adolescents with ED. However, parent reports of daughters with AN, and daughters' self-reports suggest that high levels of social withdrawal are common in this population (Ekeroth, Engstrom, Hagglof, & Broberg, 2003; Muratori, Viglione, Maestro, & Picchi, 2004; Toro et al., 1995). Two studies reporting social withdrawal have used

instruments from the Achenbach System of Empirically Based Assessment (Achenbach & Rescorla, 2001). In one of these studies, parents of adolescents in an inpatient treatment facility completed a measure of internalizing and externalizing problems (i.e., the Child Behavior Checklist; Achenbach & Rescorla, 2001). In comparison to parent ratings for the adolescents with mood/anxiety disorders, withdrawn scores were significantly higher for the ED group (Muratori, et al., 2004). Similarly, in comparison to a community sample of adolescents matched for age, sex, and geographic location, adolescents with ED (AN, BN, and EDNOS) scored significantly higher on the Youth Self-Report withdrawn subscale (Ekeroth, et al., 2003). Although no studies were found examining loneliness in clinical samples, one study examining the relations between actual body weight, perceived weight, and loneliness in high school females suggests that loneliness may be related to eating disorder thoughts and behaviors in adolescents (Page, 1991). In that study, underweight girls who believed they were overweight reported greater feelings of loneliness than girls who did not perceive themselves as fat. These girls were also more likely to be engaging in self-induced vomiting, taking diet pills, fasting, and crash dieting than other girls in the sample (Page, 1991).

In combination with the research with adult populations these studies suggest loneliness may be a problem for adolescents with ED. However, social withdrawal does not necessarily equate to loneliness, and work with clinical samples of adolescents is lacking. Given the many negative correlates associated with loneliness, studies are needed that examine loneliness in younger individuals with anorexia and BN as this could have important implications for interventions.

Peer Adjustment and ED Conclusion

In summary, the reviewed research highlights the importance of research examining the association between peer adjustment and adolescents' developmental trajectories. Although, rarely addressed explicitly, several areas of research suggest that adolescents with ED may experience difficulties in their peer adjustment. However, in some areas results from research with clinical populations differ somewhat from results found with at-risk high school samples, and each area of peer adjustment has not been examined in both populations.

Based on the clinical research we would expect adolescents with ED to have impaired social adjustment, a fewer number of friends than typically developing adolescents, close friendships that lack intimacy and support, and high levels of social anxiety and loneliness. Given the limited research examining the negative qualities associated with close friendships in clinical populations it is difficult to make predictions in this area. Research does suggest that individuals with ED have difficulties expressing anger and coping with conflict; however, it is not clear how these difficulties would impact the negative qualities associated with the close friendships of adolescents with ED. That is, the difficulty adolescents with ED have effectively expressing themselves could lead to greater and longer lasting conflict, or alternatively, they may report fewer negative qualities associated with their close friendships if they work to avoid conflict altogether. Research with clinical populations has not been done examining adolescents with ED functioning at the level of the peer group.

Risk factors research suggests that adolescents with ED would belong to high status crowds that are characterized by high levels of disordered eating. Results are

somewhat mixed with regard to perceived acceptance and relational aggression, with some studies failing to find an association between eating disorder behaviors and acceptance and aggression, and others reporting a positive association. With respect to the positive qualities associated with close friendships, in contrast to the clinical research suggesting deficits in intimacy, risk factors research reveals that adolescents reporting extreme weight loss behaviors report high levels of social support. Finally, similar to the clinical literature, the risk factors research also suggests high levels of social anxiety and loneliness in adolescents with ED. Together these findings highlight the potential importance of comprehensively examining the peer adjustment of adolescents with ED in order to determine areas of strength and vulnerability, and suggest that the interpersonal experiences of adolescents with ED may differ from peers who do not develop ED (Pike, 1995; Ekeroth, et al., 2003).

Research with a clinical population of adolescents with ED would help to clarify some of the discrepancies (e.g., social support, number of friends) between the risk factors and clinical research. The peer adjustment of adolescents with ED may either be similar to that of at-risk adolescents or adults with ED. One goal of risk factors research is to develop models to predict who will develop clinical disorders. This assumes that there is some continuity between typical, at-risk, and clinical populations. However, the peer adjustment of adolescents with ED may differ qualitatively from that of at-risk populations. The current study addresses this question.

Understanding the unique strengths and weaknesses associated with adolescents with ED peer adjustment will also have important implications for treatment. For instance, adolescents who are resistant to working on changing their eating disorder

symptoms (Geller, et al., in press) may be motivated to work on enhancing their peer relationships because relative to eating disorder symptoms which are often considered egosyntonic, difficulties with peers may be perceived as egodystonic. Moreover, treatment approaches focusing on enhancing interpersonal relationships have been shown to be effective for adolescents with depression (e.g., Moreau & Mufson, 1997) and adults with BN (Agras, Walsh, Fairburn, Wilson, & Kraemer, 2000; Davies, 2004; McIntosh, Bulik, McKenzie, Luty, & Jordan, 2000). Finally, within other clinical populations, such as children and adolescents with attention deficit hyperactivity disorder, measures of peer adjustment have been used to assess treatment outcome (Bukowski & Adams, 2005). Thus understanding which areas of peer adjustment are impaired in adolescents with ED could have a number of clinical implications.

Methodological Considerations and Control Groups

To date, a weakness of ED research has been the limited utilization of appropriate control groups (e.g., Pike, 1995; Sim & Zeman, 2004; Toro, et al., 1995) and inadequate examination of the role of comorbidity. Healthy control groups allow for comparisons to be made with respect to normative development (Ekeroth, et al., 2003). Psychiatric control groups aid in the examination of the specificity of findings to a particular disorder versus features that may be common to individuals with psychiatric problems in general.

For adults, EDs are highly comorbid with DD (Godart, et al., 2007). Research on comorbidity in adolescents with ED is scarce (McDermott, Forbes, Harris, McCormack, & Gibbon, 2006) and results are variable (Brewerton, 2002). For instance, in a study of twins, Keel et al., 2005 reported that 30.3% of adolescents with an ED had comorbid Major Depression. In contrast, in a large epidemiological study Lewinsohn, Striegel-

Morre, & Seeley (2000) reported a lifetime prevalence rate of 84.2% for Depression (Major Depression or Dysthymia) amongst young adults with an ED (either AN or BN). In a second study with adolescents recruited from the community the rate of comorbidity between DD and ED was approximately 40% (Zaider, Johnson, & Cockell, 2000). In clinical samples of adolescents, comorbidity rates of approximately 50% have been reported for adolescents with BN and EDNOS binge/purge type (e.g., Binford & Le Grange, 2005) and AN (e.g., Saccomani, Savoini, Cirrincione, Vercellino, & Ravera, 1998). However, in another study of adolescents with AN the comorbidity rate with affective disorders was only 18% (Herpertz-Dahlmann & Remschmidt, 1993). Thus the findings are inconsistent and there are a number of methodological problems associated with this research. Despite these limitations, the high rates of comorbidity between DD and ED have raised the question whether the two disorders are in fact distinct in these individuals (e.g., Steinhausen, 1997). To begin to address this question research is needed that compares adolescents with ED with and without comorbid DD on secondary features of the disorders such peer adjustment (Lewinsohn, et al., 2000). Thus the current study includes adolescents with ED with and without comorbid DD.

In addition to examining the impact of comorbidity between ED and DD, comparisons between individuals with ED and individuals with DD (but no ED) is also needed in order to have an appropriate psychiatric control group. Depression and ED share a number of common features that suggest that depressed female adolescents would serve as an appropriate psychiatric control group. First, both disorders occur more in female than male adolescents (American Psychiatric Association, 2000; Weissman, Warner, Wickramaratne, Moreau, & Olfson, 1997). Second, ED are rarely seen in young

children and similarly depression is less prevalent in children compared to adolescents. Finally, the prevalence of each disorder increases dramatically around the time of puberty (American Psychiatric Association, 2000; Ge, Lorenz, Conger, Elder, & Simons, 1994; Hankin et al., 1998; Kotler, Cohen, Davies, Pine, & Walsh, 2001; Wichstrom, 1999). The increased occurrence of eating disorder and depression in females compared to males during adolescence suggests that there may be a common experience that puts adolescent females at greater risk than males for these disorders during this stage of development. Since peer relations become increasingly important to adolescents (Hartup & Abecassis, 2002), and because females have been found to place more importance on peer relations than do males (Prinstein & Aikins, 2004), examining the peer relations of depressed, eating disordered, and typically developing adolescent females may help to clarify experiences that are related to movement towards each type of developmental trajectory.

Similar to ED and depression, anxiety disorders are also more common in adolescent females than in males, and show an increase in prevalence during adolescence (American Psychiatric Association, 2000; Hankin et al, 1998; Wichstrom, 1999). However, other features of these disorders suggest that in comparison to depressed adolescents, anxious adolescents may not be as appropriate as a control group. Specifically, anxiety disorders are more common during childhood than are depression and ED (Cole et al., 1998) and therefore, the role of the onset of puberty and the associated changes in peer relationships during adolescence in anxiety disorders appears less prominent in comparison to ED and depression. Also, childhood anxiety problems represent common risk factors for depression and ED (Bulik, Sullivan, Fear, & Joyce, 1997; Cole, et al., 1998; Powers & Santana, 2001; Toro, et al., 1995). Thus, it is likely

that a significant portion of adolescents in both psychiatric groups will have comorbid anxiety problems that predated their ED or depression. Therefore, when both ED and DD share anxiety problems as a risk factor examining a secondary feature of both disorders, such as their peer relationships, could help to differentiate why some adolescents develop depression, whereas others develop ED, and still others develop both ED and DD.

Therefore, the present study included three groups; typically developing female adolescents (i.e., normative control group of female adolescents without a history of mental health problems), female adolescents with depression (i.e., psychiatric control group), and female adolescents with ED (with and without comorbid DD), respectively. Data from the typically developing and DD groups will facilitate the examination of whether there are interpersonal difficulties that are specific to adolescents with ED (Toro, et al., 1995). Comparing adolescents with ED with and without comorbid DD will allow for the role of comorbidity on peer adjustment to be examined.

Purposes and Hypotheses

The overall objective of this study is to comprehensively examine peer adjustment in a clinical sample of adolescents with ED. Thus, peer crowd affiliation, perceived acceptance from peers, experiences with relational aggression, number of friends, qualities that characterize friendships, loneliness, and social anxiety were assessed in this study. In order to facilitate conclusions that are specific to adolescents with ED, two control groups are included in this research, namely, typically developing adolescent females without a history of mental health problems and adolescent females with DD.

Purpose 1. To Examine whether the Peer Adjustment of Female Adolescents with ED Differs from that of Adolescents with DD, and Typically Developing Adolescents.

The first purpose of this research was to examine whether peer adjustment of female adolescents with ED differs from that of the two control groups. Based on the review of the literature, the following hypotheses were formulated:

Experiences within the Peer Group

Internalizing psychopathology is typically related to affiliation with low status crowds and low perceived acceptance from peers (e.g., Kuttler, et al. 1999); however, research suggests that eating disorder symptoms may be more common in high or average status crowds, and related to higher perceived acceptance (e.g., Paxton, et al. 1999). Therefore, it was hypothesized that significantly more girls with ED and typically developing girls would report affiliation with average and high status crowds in comparison to adolescents with DD. Moreover, it was hypothesized that girls with ED would have higher perceived acceptance ratings than both control groups, and typically developing girls would have higher perceived acceptance ratings than girls with DD. With respect to relational aggression, it was hypothesized that girls with ED and DD would have higher perpetrator and victimization scores than typically developing girls.

Experiences with Close Friends

Quantity and quality of friendships. Adults with ED report having few close friends during childhood (Fairburn, et al., 1997); therefore, it was hypothesized that adolescents with ED would identify fewer close friends compared to the number of close friends reported by the two control groups. Research also suggests that the close friendships of adults with ED may be characterized by low levels of intimacy and support

and high levels of conflict. Moreover, findings from studies that have examined social adjustment in adults with ED suggest greater impairment relative to adults with depression (Norman & Herzog, 1984). Of note, research with adolescent high school students suggests that high levels of support may be related to greater use of extreme weight loss behaviors (Paxton, et al., 2002). Based on the literature with clinical populations, it was hypothesized that in comparison to both control groups, adolescents with ED would have significantly lower ratings of positive qualities of their close friendships and higher ratings of negative qualities of their close friendships.

Peer network. Given the large body of research suggesting that there are peer groups that can be characterized by high levels of concerns regarding body image and disordered eating (Lieberman, et al., 2001) it was hypothesized that compared to girls in the two control groups, girls with ED would report a significantly greater number of friends in their peer network who engage in dieting and disordered eating.

Loneliness and Social Anxiety.

Social withdrawal and loneliness are commonly reported among adolescents with ED and depression (e.g., Muratori, et al. 2004). It was hypothesized that in comparison to typically developing adolescents, adolescents with ED and DD would report significantly greater loneliness. Finally, given the strong relations between social anxiety and ED (e.g., Bulik, 1995), it was hypothesized that in comparison to both control groups, adolescents with ED would report significantly higher levels of social anxiety. It was also hypothesized that adolescents with DD would report significantly higher levels of social anxiety than the typically developing control group.

Purpose 2. To Examine the Impact of Comorbid ED and DD on Peer Adjustment.

Although recent research suggests that comorbidity between ED and DD is high in adolescent populations, there is little research with adolescents with ED that examines the impact of comorbidity on these adolescents psychosocial functioning. That is, it is not known whether the peer adjustment of adolescents with EDs will differ between those who do and do not have a comorbid DD. Therefore, the second purpose of this research was to examine the impact of comorbid ED and DD on peer adjustment. Given the preliminary nature of this research these analyses are exploratory and therefore specific hypotheses were not proposed.

Purpose 3. To examine ED Symptom Presentation and Peer Adjustment.

As discussed above, approximately 50% of adolescents presenting for treatment of an ED meet diagnostic criteria for EDNOS (e.g., Fisher et al., 2001). Despite the high rates of EDNOS in adolescents, this group is particularly understudied (Binford & Le Grange, 2005). Individuals with EDNOS are a very heterogenous group and are therefore often excluded from studies. This is unfortunate as research that has been conducted suggests that a diagnosis of EDNOS does not indicate that an individual has a less severe ED relative to individuals diagnosed with AN or BN (Fairburn & Bohn, 2005; Le Grange, Loeb, Van Orman, & Jella, 2004). Moreover, it is common for individuals with ED to transition between diagnostic categories over time (i.e., to move from AN to BN). Notably however there is a subset of individuals with AN who do not engage in binge and purge behaviors whose diagnosis may be temporally stable. As such, the relation between ED symptom presentation and peer adjustment needs to be examined. The third purpose of this research was to explore the association between peer adjustment

and ED symptom presentation. First, peer adjustment between adolescents with AN and EDNOS will be examined. Second, collapsing across ED diagnostic categories, peer adjustment between adolescents who do and do not engage in purging (i.e., self-induced vomiting) will be examined.

Purpose 4. To Examine ED Symptom Severity and Peer Adjustment

Collapsing across groups, the fourth purpose of this research was to investigate the association between eating disorder symptoms severity and peer adjustment. It was expected that more severe eating disorder symptoms would be associated with maladaptive peer adjustment. Given the relations between depressive symptoms and maladaptive peer adjustment (e.g., Schutz and Paxton, 2007) the effects of depressive symptoms were controlled. No specific hypotheses were proposed given the limited amount of research in this area.

METHOD

Participants

Using a sample of convenience, 79 females ranging in age from 12- to 18-years were recruited for this study. Given that the majority of adolescents presenting for treatment of an eating disorder are females (American Psychiatric Association, 2000) males were excluded from the study. Of the 79 adolescents recruited, 75 met study inclusion criteria. Twenty-five participants met Diagnostic and Statistical Manual of Mental Disorders – IV – TR (American Psychiatric Association, 2000) criteria for AN, BN, or EDNOS (ED group), 25 participants criteria for major depression, depression NOS, or dysthymia (DD group), and 25 participants reported no history of significant mental health problems or current depressive or eating disorder psychopathology. Diagnoses for the two clinical groups were established with a semi-structured diagnostic interview based on the DSM-IV criteria. For purpose 1 analyses adolescents who met criteria for both an eating and a depressive disorder were included in the ED group. To determine the role of comorbid ED and DD, for purpose 2 analyses the ED group was divided into adolescents with an ED but no comorbid DD and adolescents with a comorbid ED and DD. Participants included in the control group completed a questionnaire screening for past and current psychopathology. The Beck Depression Inventory-II (Beck, Steer, & Brown, 1996) was also used to screen for depressive symptoms. If participants in this group indicated past or current psychopathology a follow-up interview was completed to determine eligibility. Participants who indicated a history of clinically significant mental health problems, treatment for a psychological disorder, or who reported current clinically significant symptoms of depression (BDI-II

score > 14) or ED were either excluded (n=3) or moved to the appropriate clinical group (n=3). One participant recruited for the eating disorder group did not meet DSM-IV criteria for a disorder and as such was excluded from the study.

Recruitment

Participants were recruited from community health agencies including the Teen Health Centre (THC) and Bulimia and Anorexia Nervosa Association (BANA) in Windsor, Ontario and the Department of Child and Adolescent Psychiatry at the University of Chicago Hospitals (U of C) in Chicago, IL. Within the ED group, 7 (28%) participants were recruited from the THC, 4 (16%) from BANA, and 14 (56%) were recruited from the U of C. Within the DD group, 15 (60%) were recruited from the THC and 10 (40%) were recruited from the U of C. With the typically developing group, 23 (92%) were recruited from the THC and 2 (8%) were recruited from the U of C.

Care providers were informed of the study design including a description of the three groups of participants to be recruited (e.g. ED, DD, and without history of mental health problems) and asked to distribute letters of information that briefly described the research to potential participants. Potential participants were instructed to write their name and a contact number on the letter of information if they agreed to have a research assistant contact them to describe the study more fully. In order to minimize feelings of coercion care providers were instructed to tell potential participants to leave the letter of information with front desk staff so that they were not aware of their clients' participation decisions. To monitor participant recruitment rate each letter of information that was distributed to care providers was numbered. Care providers were asked to return letters of information if (1) a potential participant declined participation and (2) when

recruitment was completed, or (3) when care providers were no longer asking potential participants. Potential participants were contacted by phone and the study was described and any questions were answered. If at this point potential participants expressed interest in participating in the study a research assessment was booked.

Potential participants and their parents were encouraged to discuss the study before deciding whether or not to participate. It was stressed that declining participation would not impact ongoing health care, and also that participants may withdraw from the study at any stage without explanation. Written consent was obtained from each adolescent at the research assessment and for adolescents under 16 years of age, parent or guardian consent was also obtained (see Appendix A).

A post hoc power analysis revealed that with twenty-five participants per group, the current study has 80% power to detect a true difference of a .80 standard deviation shift in the mean, which is equivalent to a large effect size. As the main hypothesis compares typically developing adolescents to clinical populations it is reasonable to expect a large effect size. Given the difficulties recruiting clinical populations of adolescents the number of participants per group is similar to recent studies published in child and adolescent clinical psychology journals (e.g., Sim & Zeman, 2004; Vrielynck, Deplus, & Philippot, 2007).

Measures

Diagnostic and Screening Measures

Demographic information. Participants were asked to provide their age, height, weight, ethnicity, and to described their parents' relationship status (e.g., parents married, divorced, separated) and level of education. Age, weight, and height were used to

calculate BMI z-scores using Centers for Disease Control and Prevention (CDC) 2000 data. (see Appendix B). Research suggests that individuals with ED provide accurate reports of their weight (McCabe, McFarlane, Polivy, & Olmsted, 2001).

Kiddie - Schedule for Affective Disorders and Schizophrenia - Present Version (M-KSADS-P; Chambers, Puig-Antich, & Hirsch, 1985). Diagnoses of the adolescents in the ED and DD groups were determined using the KSADS-P. The KSADS-P is a semi-structured interview that assesses for current Axis-I DSM-IV disorders. The KSADS-P has been found to have good concurrent and predictive validity with adolescents (Lewinsohn, Rohde, Klein, & Seeley, 1999; Rao, Ryan, & Birmaher, 1995; Williamson, Ryan, Dahl, & Jeanette, 1993) and high inter-rater reliability (Ambrosini, 2000).

Interviews were conducted by the investigator (SZ) and 2 child clinical psychology graduate students. As per the training requirements of the K-SADS, prior to administering the interview to adolescents, interviewers reviewed DSM-IV diagnostic criteria, read the K-SADS-P instruction manual, and conducted role plays with each other. When questions regarding the administration or scoring of the K-SADS arose SZ discussed these issues with the corresponding author for the K-SADS, Dr. Paul Ambrossini. All interviews were audio taped and 10 (20%) were randomly selected and coded by one of the interviewers who was blind to the original diagnoses. Agreement was scored when the two interviewers assigned the same Axis I disorder. There was 100% agreement between raters.

History of Mental Health Problems Screening. This questionnaire was used to screen adolescents who were included in the healthy control group. Although this

questionnaire was developed for the current research it is based on the format used in previous research (Sim & Zeman, 2004). Similar to the Sim and Zeman (2004) study, participants were asked if "they have ever experienced or sought treatment for the following symptoms or conditions"; (a) severe illness or hospitalization; (b) fainting or passing out; (c) problems with eating or weight; (d) problems with sleeping; (e) problems with alcohol or drugs; (f) problems with breaking rules or laws; (g) anxiety, nervousness, or worrying; (h) depression, moodiness, or irritability; (i) other medical problems or conditions (see Appendix C).

Eating Disorders Inventory-2 (EDI-2; Garner, 1991). The EDI-2 is a 91 item self-report measure of eating disorder symptoms. In completing the measure participants answer a number of questions about their shape, weight, and eating on a 6-point scale ranging from never to always. The EDI-2 has 11 sub-scales, three of which namely, Drive for Thinness (DT), Bulimia (B), and Body Dissatisfaction (BD) were used in this research to describe the severity of participants' eating disorder pathology. The EDI has a reading level of grade 5 (Williamson et al., 1995). Extensive psychometric support for this instrument for adolescents is available in the treatment manual (Garner, 1991; see Appendix B). Mean scores for Canadian non-patient adolescent female high school students (14-18 years) on the EDI-2 DT, B, and BD subscales are M = 7.1 (SD=5.9), M = 2.2 (SD = 3.3), and M = 12.1 (SD = 12.1), respectively (Shore and Porter, 1990). For this sample, internal consistency was strong (DT = .72, B = .70, BD = .80; see Appendix D).

Beck Depression Inventory-Second Edition (BDI; Beck & Steer, & Brown, 1996). The BDI-II is a 21-item self-report measure that assesses affective, somatic, and cognitive symptoms of depression. In completing the measure participants select one of

three statements (scored 0, 1, or 2) for each item that they feel is most representative of themselves over the past two weeks. The psychometric properties of the BDI-II have been established in adolescent populations with good internal consistency with adolescent outpatients (alpha = .92; Beck et al. 1996). The BDI-II has been shown to differentiate between depressed and non-depressed clinic referred adolescents (Kashani, Sherman, Parker, & Reid, 1990; see Appendix B). BDI cut-offs for risk for DD include 14-19 mild, 20-28 moderate, 29-63 severe. The coefficient alpha for this sample was .95 (see Appendix E).

Experiences within the Peer Group

Peer Crowd Questionnaire. Peer crowd affiliation has been assessed by presenting adolescents with a list of crowd names and definition and having participants circle the crowd that they identify with (La Greca, Prinstein, & Fetter, 2001). Although the defining features of peer crowds are relatively consistent across samples, the labels for each crowd vary somewhat across samples. Therefore, there is no standardized format for this assessment strategy. Participants were asked to verify that they were familiar with each crowd and then to identify the crowd they identify with. The option to list an alternate crowd was provided (see Appendix F). The following crowds were listed in the current study: Jocks (e.g., athletic, may be on school teams), Brains/Nerds (e.g., do well in school, enjoy academics), Burnouts (e.g., skip school, get in trouble), Populars (e.g., high status adolescents, image-oriented, Alternatives (e.g., do not conform to social norms), Average (e.g., just average), None/Loner (e.g., perceived as spending a lot of time alone or does not fit in), and Other. The "Other" category was followed by a blank line where adolescents were asked to describe their crowd affiliation.

The Self-Perception Profile for Adolescents (SPPA; Harter, 1988). The SPPA is a 45-item self-report measure developed for use with adolescents between the ages of 14 and 18 years. The SPPA consists of 9 subscales (Scholastic Competence, Social Acceptance, Athletic Competence, Physical Appearance, Job Competence, Romantic Appeal, Behavioral Conduct, Close Friendship, and Global Self-Worth), only the 5-item Social Acceptance subscale (PAS) was used in this research and describes the extent to which adolescents feel accepted by their peers (e.g. "some teenagers are socially accepted" see Appendix G). The PAS subscale has good internal consistency (Harter, 1988; La Greca, et al., 2001). The PAS has been used extensively in research with adolescents to assess their perceived peer acceptance (e.g., La Greca, et al., 2001). In the current sample the coefficient alpha for the PAS subscale was .79.

Revised Peer Experiences Questionnaire (RPEQ; Prinstein, Boergers, & Vernberg, 2001; De Los Reyes & Prinstein, 2004). The RPEQ assesses adolescents experiences as the perpetrator ("Aggression" subscales) and victim ("Victimization" subscales) of overt aggression, relational aggression, and prosocial behaviors. Only the Relational Aggression (3 items; e.g., "I did not invite a teen to a party or other social event even though I knew the teen wanted to go"), Relational Victimization (3 items, e.g., "Some teens left me out of an activity or conversation that I really wanted to be included in"), Reputational Aggression (3 items; e.g., "I tried to damage another teens' social reputation b spreading rumors about them"), and Reputational Victimization (3 items; e.g., "Another teen gossiped about me so others would not like me") subscales were used in the proposed research (see Appendix H). The internal consistency alphas for each of these subscales are .68, .84, .76, and .83, respectively. The factor structure of the RPEQ

has been supported by factor analyses. The ecological validity of the measure is supported by research revealing high correlation between adolescents RPEQ and peer nominations of aggression and victimization (Prinstein, et al., 2001; De Los Reyes & Prinstein, 2004). Test re-test reliabilities have ranged between .48 and .52 over a 6-month period (Prinstein, et al., 2001; see Appendix B). In the current sample, coefficient alphas were .71, .81, .78, and .79 for Relational Aggression, Relational Victimization, Reputational Aggression, and Reputational Victimization, respectively.

Experiences with Close Friends

Network of Relationships Inventory-Revised (NRI-R; Furman & Buhrmester, 1985). The NRI is a 42 item self-report questionnaire that assesses several relationships qualities including: companionship, instrumental aid, intimacy (disclosure), nurturance, affection, admiration, reliable alliance, support, satisfaction, relative power, conflict, antagonism, criticism, and dominance. Each relationship quality is assessed with 3-items that are rated on a 5-point Likert scale ranging from 1 (little or none) to 5 (the most). The Social Support Factor (SSF) score consists of the average of the Companionship, Instrumental Aid, Intimacy, Nurturance, Affection, Admiration, Reliable Alliance, Satisfaction and Support scales. The Negative Interaction Factor (NIF) score is the average of the Conflict, Antagonism, Criticism, and Dominance scales. The Short Form Support (SF-support) score is the average of items assessing the extent to which the friendship pair cares about, helps, and confides in each other. The Short Form Negative Interactions (SF-neg) score assesses the level of conflict in the friendship.

Participants were asked to complete the measure in terms of their relationship with their closest-same sex friend (see Appendix I). The NRI was developed for use with

children and adolescents and has been used extensively in research examining the qualities that characterize friendships (e.g., Furman & Buhrmester, 1992; La Greca & Harrison, 2005). The scales have been shown to have acceptable internal consistency (e.g., Furman & Buhrmester, 1992; La Greca & Harrison, 2005) and high test-retest reliability (Furman & Buhrmester, 1992; see Appendix B). The internal consistency alphas for the SSF, NIF, SF-support, and SF-neg were .96, .88, .89, and .89, respectively.

Number of Friends and Behavioral Characteristics of Friendship Network (BCFN). Although this measure was developed for the purposes of this research, this method of assessing adolescents friends' engagement in deviant or health-risk behaviors has been used in previous research (e.g., Dishion, et al., 1991; Prinstein, et al. 2001). Adolescents were asked to list the initials and gender of their close friends. They were presented with a list of eating disorder thoughts and behaviors (e.g., dieting, talking about feeling fat and wanting to lose weight, self-induced vomiting) and asked to identify which of their friends engages in these behaviors (see Appendix J). Previous research indicates that adolescents reports of their friends health-risk behaviors are similar to friends' self-reports (Dishion, et al., 1991). The number of individuals each adolescent identified was used to quantify number of friendships. The number of female friends that reportedly engaged in each eating disorder thought or behavior was used to assess the behavioral characteristics of adolescents' friendship network. For each participant, a percentage of total female friends engaging in each of the target behaviors score was computed by dividing the number of female friends reported to engage in each behavior by the total number of female friends identified.

Revised UCLA Loneliness Scale Short Form (RLS-SF; Knight, Chisholm, Marsh, & Godfrey, 1988; Russell, Peplau, & Cutrona, 1980). The RLS-SF is a 10-item self-report measure of feelings of loneliness (see Appendix K). Items are rated on a 4-point Likert scale ranging from 1 (never) to 4 (often). The correlation between total score for the short form of the RLS-SF and the original 20-item measure was .97 (Knight, et al., 1988). The RLS-SF has good internal consistency .85 (Knight, et al., 1988). The Revised UCLA Loneliness Scale has good concurrent and discriminant validity (Russell, et al., 1980) and has been used extensively in research with adolescents (e.g., Page, 1991). For this sample, the alpha coefficient was .87.

Social Anxiety Scale for Adolescents (SAS-A; La Greca & Lopez, 1998). The SAS-A is an 18 item self-report measure of anxiety in social situations involving peers (see Appendix L). Each item is rated on a 5-point Likert scale ranging from 1 (not at all) to 5 (all the time). The SAS-A consists of three subscales: Social Avoidance and Distress – New (SAD-New), Social Avoidance and Distress – General (SAD-General), and Fear of Negative Evaluation (FNE). The subscales of the SAS-A have acceptable internal consistencies .83, .76, and .91 for the SAD-New, SAD-General, and FNE scales, respectively (La Greca & Lopez, 1998). Confirmatory factor analyses support the three scales (Inderbitzen-Nolan & Walters, 2000; La Greca & Lopez, 1998). Correlations with other measures assessing anxiety support the construct validity of the measure (Inderbitzen-Nolan & Walters, 2000; see Appendix B)). Norms for adolescent female high school students (15-18 years) on the SAS-A are M = 16.87 (SD=6.4), M = 15.37 (SD = 4.7), M = 6.91 (SD = 2.8) and M = 39.08 (SD = 12.0), for FNE, SAD-New, SAD-

general, and Total scores, respectively (La Greca & Lopez, 1998). For this sample, internal consistency was strong (FNE = .94, SAD-New = .91, SAD-General = .80).

Procedure

Data collection. Potential participants were told about the study by their care provider and if clients indicated that they were interested in participating in the study they were contacted by a research assistant to review the study requirements and to arrange a time to meet. At the beginning of the assessment written consent forms were reviewed with the participant and a parent or guardian (see Appendix A). A research assistant addressed all of the participants' concerns and then obtained written consent and assent. After agreeing to participate, participants in the clinical samples participated in a semi-structured diagnostic interview and completed a series of questionnaires. Participants in the typical control group only completed the questionnaires. However, if participants recruited for the typically developing control group indicated that they have experienced any of the symptoms or conditions assessed on the History of Mental Health Problems Screening research assessors asked follow-up questions to assess the severity of the problems. Participants who indicated symptoms of depression or ED were given the KSADS-P and if they met diagnostic criteria for an eating disorder (n = 1) or a depressive disorder (n = 2) were included in the relevant clinical group.

To minimize order effects questionnaires were presented in random order (Meltzoff, 1998). Completion of the tasks took approximately two and a half hours for the clinical groups and ninety minutes for the typical control group. In order to minimize the tendency for participants to respond in a socially desirable way immediately before beginning the assessments the research assistant reviewed confidentiality. After

completing the interviews and questionnaires participants were thanked for their time and any questions they had were answered. If participants indicated interest in receiving feedback they were given the necessary information to access a summary of the results on the University of Windsor web site. All participants received information on how to obtain mental health services. Participants' names were entered in a lottery for a thirty dollar mall gift certificate and an iPod. Procedures were approved by ethics boards at the University of Windsor and the University of Chicago and executive boards at the Teen Health Center and Bulimia and Anorexia Nervosa Association.

RESULTS

Analysis Plan

Chi square analyses were used to compare groups on categorical peer adjustment variables (e.g., crowd affiliation). A series of Analysis of Variances (ANOVA) or Multivariate Analysis of Variances (MANOVA) were conducted to compare adolescents with eating disorders (ED), adolescents with depressive disorders (DD), and typically developing adolescents across the remaining peer adjustment variables. ANOVAs were used for those peer adjustment measures that are assessed with single scale measures (e.g., perceived acceptance, number of friends, loneliness). MANOVAs were used for analyses when peer adjustment measures consisted of several subscales (e.g., relational aggression, qualities that characterize friendships, social anxiety). For each ANOVA or MANOVA peer adjustment variables served as the dependent variable and group membership served as the fixed factor independent variable. Significant ANOVAs and MANOVAs were followed up with Tukey's Honestly Significant Difference post-hoc pairwise comparisons.

To determine whether age and BMI z-scores should serve as covariates, Pearson-product moment correlations between age, BMI z-scores, and each of the peer adjustment variables were conducted. There was a trend for the relation to be significant between age and percentage of girl friends who feel it is important to be thin ($r = -.21$, $p = .08$). No significant correlations between age and scores on the peer adjustment variables were found. (all p's $>.15$).

Significant correlations were found between BMI z-scores and intimacy in close friendships ($r = .32$, $p<.01$), and the percentage of girl friends encouraging adolescents to

diet ($r = .34$, $p<.01$). Trends were found for the associations between BMI z-scores and RPEQ reputational aggression, NRI-R nurturance, NRI-R dominance and NRI-R Short Form Support factor scores (r's = .22, .21, -.20 and .22, respectively, all p's <.10). No other significant correlations or trends between BMI z-scores and peer adjustment variables were found (all p's >.10). Therefore, it was decided that the initial MANOVAs comparing groups on NRI-R and RPEQ scores would be followed up with MANCOVAs with BMI z-scores entered as the covariate. The MANOVAs comparing groups on the BCFN would be followed up with two MANCOVAs. In the first MANCOVA both age and BMI z-scores were entered as covariates and in the second MANCOVA BMI z-scores were entered as the covariate. Given the relatively small number of participants per group, differences in results between MANOVAs and MANCOVAs should be interpreted cautiously as any loss of significant findings could be attributed either to the effects of the covariate or the loss of power.

Description of Participants

As stated earlier, attempts were made by the investigator to obtain the recruitment rate for this study. Unfortunately, for several reasons recruitment rate is not known. SZ regularly followed up with care providers through meetings, emails, and phone calls to highlight the importance of returning letters of information. However, care providers indicated to SZ that they had described the study to potential participants without distributing the letter of information and without monitoring the number of teens told about the study, or failed to return letters of information for those adolescents who stated they were not interested in participating. Other care providers were willing to be involved in recruitment for the study but given their busy schedules and time constraints

were not able to complete the additional paper work associated with the letters of information.

Of the 25 participants with ED 9 (36%) met criteria for anorexia nervosa (AN), 4 (16%) for bulimia nervosa (BN), and 12 (48%) for eating disorder not otherwise specified (EDNOS). With respect to comorbidity, 12 (48%) adolescents with ED met criteria for major depression (MDD), 2 (8%) for dysthymia (DYS), 1 (4%) for Generalized Anxiety Disorder (GAD), and 1 (4%) for Social Phobia (SP). Of the 25 participants with DD, 21 (84%) met criteria for MDD and 4 (16%) met criteria for DYS. Two (8%) of these participants had comorbid SP, 1 (4%) met criteria for ADHD, and 1 (4%) met criteria for GAD. Table 1 describes the ethnicity, relationship status of participants' parents, and parents' level of education for the entire sample and for each group. Table 2 describes the mean, standard deviation, and range for each of the peer adjustment variables for the entire sample.

Table 1. Description of ethnicity, parent relationship status, and parent education by group

	Sample (N=75) % (n)	Typical (n=25) % (n)	DD (n=25) % (n)	ED (n=25) % (n)
Age (years)				
12	6.7 (5)	12 (3)	8 (2)	0
13	9.3 (7)	4 (1)	8 (2)	16 (4)
14	18.7 (14)	28 (7)	12 (3)	16 (4)
15	14.7 (11)	20 (5)	20 (5)	4 (1)
16	21.3 (16)	16 (4)	20 (5)	28 (7)
17	17.3 (13)	8 (2)	24 (6)	20 (5)
18	12 (9)	12 (3)	8 (2)	16 (4)
Ethnicity				
White	62.7 (47)	60.0 (15)	48.0 (12)	80.0 (2)
Black	18.7 (14)	16.0 (4)	40.0 (10)	0
Hispanic	6.7 (5)	0	4.0 (1)	16.0 (4)
Asian	2.7 (2)	0	8.0 (2)	0
Other	9.3 (7)	24.0 (6)	0	4.0 (1)

Parent Relationship Status				
Married	64.0 (48)	64.0 (16)	56.0 (14)	72.0 (18)
Divorced/ Separated	21.3 (16)	24.0 (6)	24.0 (6)	16.0 (4)
Live Together	2.7 (2)	4.0 (1)	0	4.0 (1)
Remarried	2.7 (2)	4.0 (1)	0	4.0 (1)
None of the Above *	9.3 (7)	4.0 (1)	20.0 (5)	4.0 (1)

Parent Education	Mom	Dad	Mom	Dad	Mom	Dad	Mom	Dad
Less than high	20 (15)	16 (12)	16 (4)	8 (2)	28 (7)	28 (7)	16 (4)	12 (3)
School grad High school Grad	9.3 (7)	13.3 (10)	16 (4)	16 (4)	8 (2)	12 (3)	4 (1)	12 (3)
Some college	21.3 (16)	9.3 (7)	12 (3)	8 (2)	28 (7)	8 (2)	24 (6)	12 (3)
College grad	46.7 (35)	53.3 (40)	56 (14)	68 (17)	28 (7)	36 (9)	56 (14)	56 (14)
Missing data	2.7 (2)	8 (6)	0	0	8 (2)	16 (4)	0	8 (2)

Note. * Descriptions for "None of the Above" included parents never have been married or lived together and one parent deceased.

Ethnicity. The sample was relatively ethnically diverse, particularly within the DD group where 40% of participants identified themselves as African-American. Since no adolescent in the ED group identified themselves as African-American comparisons involving ethnicity could not be conducted between Caucasian and African-American participants. Instead, to have sufficient power to examine the relations between ethnicity and peer adjustment adolescents were divided into two groups, namely, Caucasian and non-Caucasian. The chi-square comparing the ethnicity (i.e., Caucasian and Non-Caucasian) of the three groups was not significant (χ^2 (2) = 5.56, $p < .05$).

To further explore the relations between ethnicity and peer adjustment, scores on each of the peer adjustment variables between Caucasian and Non-Caucasian adolescents were compared. Three significant between group differences were revealed. First, relative to Caucasian adolescents, Non- Caucasians had significantly higher BMI z-scores (M = .02, SD = 1.21 and M = .96 (.98), respectively, t(70) = -3.38, p <.01, CI = -1.49, .39). Second, relative to Caucasian adolescents, Non- Caucasians had significantly lower NRI-R Dominance scales scores (M = 2.26, SD = 0.77 and M = 1.85 (.68), respectively, t(72) = -2.26, p <.05, CI = .05, .76) and a significantly higher percentage of girl friends encouraging them to diet (M = 2.88, SD = 8.02 and M = 18.47 (29.34), respectively, t(73) = -3.45, p <.01, CI = -25.60, -6.57). BMI z-scores were also related to NRI-R dominance (r = -.20, p .<.10) and percentage of friends encouraging dieting from the BCFN (r = .34, p <.01). Given that planned analyses include MANCOVAs to examine the impact of BMI z-scores, on the associations between group (e.g., typical, DD, or ED) and NRI-R and BCFN scores no further analyses were included to examine the role of ethnicity and peer adjustment.

Parents' Education. Adolescents were asked to report their mother's and father's education and job. Parent education was used as a proxy for family socio-economic status because family income was not assessed, and similar to previous research (e.g., Shroff & Thompson, 2006) many participants' descriptions of their parent's jobs were either incomplete (e.g., adolescents stated they did not know their parent's job) or were too vague to estimate income level associated with the descriptor (e.g., "insurance, business owner, or Coco-cola"). In order to have sufficient numbers per education level to compare groups, parents' education was recoded into three levels; less than completion of high school, high school graduate, and some college or college graduate. A chi-square comparing mothers' level education between typically developing adolescents, adolescents with DD, and adolescents with ED was not significant (χ^2 (4) = 4.15, p >.10). Similarly, a chi-square comparing fathers' level of education between typically developing adolescents, adolescents with DD, and adolescents with ED was not significant (χ^2 (4) = 5.77, p > .10).

Table 2. Range, mean, and standard deviations for age, BMI z-scores, BMI, BDI, and EDI subscales and each of the peer adjustment variables for the entire sample (N=75).

	Minimum	Maximum	Mean	SD
Age	12.00	18.00	15.35	1.75
BMI z-score	-2.73	2.85	.357	1.21
BMI	15.30	61.10	23.23	7.55
EDI				
DT	.00	18.00	7.68	5.37
B	.00	15.00	2.83	3.70
BD	1.00	24.00	11.23	6.78
BDI	.00	53.00	16.85	13.37
PAS	1.00	4.00	2.92	.79
RPEQ				
Reputational Aggression	1.00	4.00	1.54	.65
Reputational Victimization	1.00	5.00	2.19	.95
Relational Aggression	1.00	4.00	1.95	.67
Relational Victimization	1.00	5.00	2.29	.90
Number of Friends	1	14	6.40	2.89

NRI-R				
Companionship	1.00	5.00	3.72	1.06
Instrumental Aid	1.00	5.00	3.12	1.02
Intimacy	1.00	5.00	3.96	1.17
Nurturance	1.00	5.00	3.94	.99
Affection	1.00	5.00	4.08	.95
Admiration	1.00	5.00	3.76	1.00
Reliable Alliance	1.00	5.00	4.09	1.088
Satisfaction	1.00	5.00	4.09	1.10
Support	1.00	5.00	3.73	1.11
Conflict	1.00	5.00	1.91	.97
Antagonism	1.00	4.67	1.83	.90
Criticism	1.00	5.00	1.51	.84
Dominance	1.00	4.67	2.10	.76
Relative Power	1.00	5.00	2.90	.56
Social Support Factor	1.00	4.96	3.83	.86
Negative Interaction Factor	1.00	4.33	1.84	.67
Short Form Support	1.00	5.00	3.87	.93
Short Form Negative Interactions	1.00	4.67	1.87	.89

BCFN				
% Vomiting to Lose Weight	0	67.00	4.40	11.88
% have ED	0	67.00	4.45	11.75
% on a Diet	0	100	20.02	26.14
% Talking about Dieting	0	100	33.00	29.91
% Exercising to Lose Weight	0	100	26.29	29.63
% Think important to be thin	0	100	27.81	35.00
% Wanting to Lose Weight	0	100	35.92	31.73
% Encouraging Dieting	0	100	8.70	20.29
% Complaining Fat	0	100	34.31	28.83
Loneliness	1.00	3.70	1.93	.65
SAS-A				
FNE	8.00	40.00	21.21	9.30
SAD-New	6.00	29.00	16.55	7.04
SAD-General	4.00	20.00	8.63	4.32

Note. BMI = Body Mass Index, EDI = Eating Disorders Inventory – 2, DT = Drive for Thinness, B = Bulimia, BD = Body Dissatisfaction, BDI = Beck Depression Inventory II, PAS = Self-Perception Profile for Adolescents Social Acceptance, RPEQ = Revised Peer Experiences Questionnaire, NRI-R = Network of Relationships Inventory –Revised , BCFN = Behavioral Characteristics of Friendship Network, SAS-A = Social Anxiety Scale for Adolescents, FNE = Fear of Negative Evaluation, SAD-New = Social Avoidance and Distress – New Situations, SAD-General = Social Avoidance and Distress - General

A MANOVA with age and BMI z-scores as the dependent variables and group as the fixed factor was significant ($F(2, 69) = 9.00$, $p<.001$, $\eta^2 = .21$). Subsequent univariate ANOVA's found no significant group differences for age. As expected, the univariate ANOVA for BMI z-scores revealed significant group differences. Planned comparison found the ED group to have a significantly lower BMI z-score than the other two groups, whereas BMI z-scores of the depressed and typically developing adolescents did not differ. Means and standard deviations for age and BMI z-scores, as well as F-tests and effect sizes, are presented in Table 3.

A MANOVA with EDI scores (e.g., Drive for Thinness (DT), Body Dissatisfaction (BD), and Bulimia (B)) as the dependent variables and group as the fixed factor was significant ($F(3, 71) = 13.08$, $p<.001$, $\eta^2 = .36$). Subsequent univariate ANOVAs revealed significant group differences for each of the EDI-2 subscales. Planned comparison found the ED group to have significantly higher DT and B scores than the other two groups, and the depressed and typically developing adolescents did not differ. BD scores for the DD group did not differ from typically developing adolescents or adolescents with ED. The ED group reported significantly greater BD than typically developing adolescents. An ANOVA with BDI scores as the dependent variable and group as the fixed factor was significant. Planned pairwise comparisons revealed that in comparison to the two clinical groups, typically developing adolescents had significantly lower BDI scores, and there were no significant differences in BDI scores between the two clinical groups. Means and standard deviations for EDI and BDI scores, as well as F-tests and effect sizes, are presented in Table 3.

Table 3. Mean age, BMI, EDI, and BDI scores for typically developing adolescents, adolescents with DD, and adolescents with ED

	Typical (n=25) M (SD)	DD (n=25) M (SD)	ED (n=25) M (SD)	F	η^2
Age	15.00 (1.82)	15.70 (1.74)	15.40 (1.73)	.92	.03
BMI z-score	.40 (1.03) ^{A}	1.12 (.93) ^{A}	-.39 (1.17) ^{B}	12.30***	.26
EDI					
DT	4.44 (3.27) ^{A}	6.80 (4.72) ^{A}	11.80 (5.16) ^{B}	17.80***	.33
B	1.28 (1.84) ^{A}	2.28 (2.37) ^{A}	4.92 (5.08) ^{B}	7.62**	.18
BD	7.48 (5.12) ^{A}	11.48 (6.15) ^{AB}	14.72 (6.79) ^{B}	8.63***	.19
BDI	6.76 (3.96) ^{A}	21.08 (12.48) ^{B}	22.72 (14.80) ^{B}	14.80***	.29

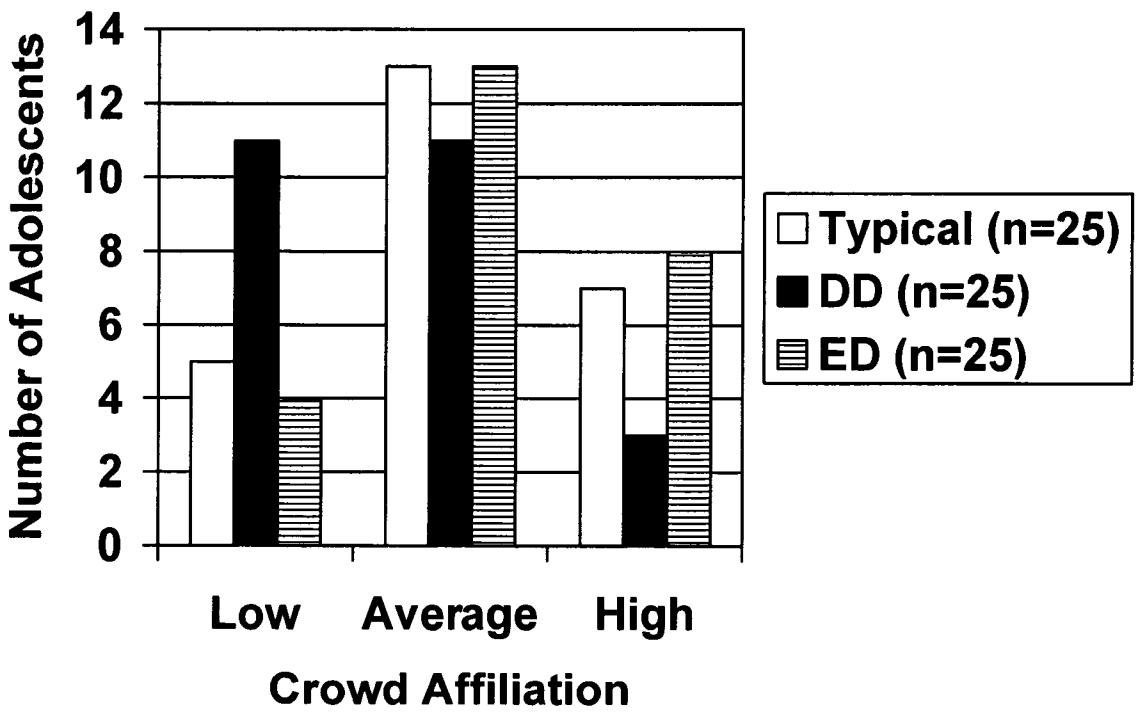
Note. BMI = Body Mass Index, EDI = Eating Disorders Inventory – 2, DT = Drive for Thinness, B = Bulimia, BD = Body Dissatisfaction, BDI = Beck Depression Inventory II, * $p<.05$, ** $p<.01$, ***$p<.001$, different superscripts denote significant pairwise comparisons, $p<.05$.

Purpose 1. To examine whether the peer adjustment of female adolescents with ED differs from that of adolescents with DD and typically developing adolescents.

Experiences within the Peer Group.

Peer crowd. The results indicated no differences in crowd affiliation between typically developing adolescents, adolescents with ED, and DD (χ^2 (4) = 6.85, p > .10). Numbers of adolescents in each group affiliated with low, average, and high status crowds are displayed in Figure 1.

Figure 1. Crowd affiliation for typically developing adolescents, adolescents with DD, and adolescents with ED.



Perceived Acceptance. An ANOVA comparing groups Self-Perception Profile for Adolescents Social Acceptance (PAS) scores was significant. Follow-up pairwise comparisons revealed that depressed adolescents had significantly lower PAS scores than typically developing adolescents, whereas adolescents' with ED PAS scores did not differ from either depressed or typically developing adolescents. Means and standard deviations for PAS, as well as F-tests and effect sizes, are presented in Table 4.

Relational Aggression and Victimization. A MANOVA comparing the three groups on subscales from the Revised Peer Experiences Questionnaire (RPEQ; e.g., reputational aggression and victimization, and relational aggression and victimization) was not significant ($F(4, 70) = 1.62$, $p>.10$, $\eta^2=.09$). Given the trend for BMI z-scores to be related to the reputational aggression subscale of the RPEQ, a MANCOVA comparing groups on the RPEQ with BMI z-scores as the covariate was conducted. The MANCOVA was not significant ($F(4, 66) = 2.29$, $p<.10$, $\eta^2=.12$).

Table 4. Comparisons of typically developing, DD Group, and ED group PAS scores

	Typical (n=25) M (SD)	DEP (n=25) M (SD)	ED (n=25) M (SD)	F	η^2
PAS	3.18 (.67)^{B}	2.59 (.77)^{A}	3.00 (.84)^{AB}	3.84*	.10

Note. PAS = Self-Perception Profile for Adolescents Social Acceptance scores, *p<.05, different superscripts denote significant pairwise comparison

Experiences with close friends.

Quantity and quality of friendships. No participants reported that they did not have any friends. Across groups 6 (8.0%) adolescents denied having a best friend. Two were in the typically developing group, 1 was in the DD group, and 3 were in the ED group. There was a trend for the ANOVA comparing groups on total number of friends identified to be significant, with the mean number of friends reported by the clinical group being approximately 1.5 less than the mean number reported by the typically developing teens. Means and standard deviations for number of friends, as well as F-tests and effect sizes, are presented in Table 5. An ANOVA comparing groups on the duration of their relationship with their closest female friend was not significant ($F(2, 72) = .01$, $p > .10$, $\eta^2 = .00$).

Two MANOVAs, the first with the positive quality subscales from the Network of Relationships Inventory –Revised (NRI-R) and the second with the negative quality subscales of the NRI-R as dependent variables, and group as the fixed factor were not significant ($F(9, 61) = 1.28$, $p > .10$, $\eta^2 = .16$ & $F(4, 69) = 2.33$, $p > .05$, $\eta^2 = .12$, respectively). A MANOVA with the Social Support Factor (SSF) score and the Negative Interchange Factor (NIF) score from the NRI-R as dependent variables, and group as the fixed factor was not significant ($F(2, 71) = 1.98$, $p > .10$, $\eta^2 = .05$). A second MANOVA with the Short Form Support (SF-support) score and the Short Form Negative Interaction (SF–neg) score from the NRI-R as dependent variables, and group as the fixed factor was significant ($F(2, 71) = 5.04$, $p < .01$, $\eta^2 = .12$). The univariate ANOVA for the SF-support score revealed no significant group differences. There was a trend for

the SF-neg score to be significant. Means and standard deviations for SF-support and SF-neg scores, F-tests and effect sizes are presented in Table 5.

To follow-up on the significant correlation between NRI-R and BMI z-scores the above analyses were repeated with BMI z-scores entered as a covariate. Results did not differ from the MANOVAs comparing groups on the positive quality subscales, negative quality subscales, or the Factor scores (i.e., all remained non-significant). The MANCOVA with the Short Form Support (SF-support) score and the Short Form Negative Interaction (SF–neg) score from the NRI-R as dependent variables, group as the fixed factor, and BMI z-scores as the covariate remained significant ($F(2, 67) = 4.35$, $p < .05$, $\eta^2 = .12$). There was a trend for the univariate ANCOVA for the SF-support score to be significant ($F(3, 70) = 2.43$, $p < .10$, $\eta^2 = .10$). Although not a statistically significant difference, the mean SF-support scores for the two clinical groups were lower than that of the typically developing adolescents. The univariate ANCOVA for the SF-neg score was not significant ($(3, 70) = 1.72$, $p > .10$, $\eta^2 = .07$).

Table 5. Number of Friends and NRI-R SF-support and SF – neg interactions for typically developing adolescents, adolescents with DD, and adolescents with ED

	Typical (n = 25) M(SD)	DD (n = 25) M (SD)	ED (n = 25) M (SD)	F	η^2
Number Friends	7.44 (3.29)	6.00 (3.28)	5.76 (1.5)	2.59[t]	.07
SF-support	4.13 (.95)	3.73 (.87)	3.75 (.96)	1.42	.04
SF-neg	2.07 (.88)	1.99 (.98)	1.56 (.75)	2.41[t]	.06

Note. SF-support = NRI-R Short Form Support Scale and SF-neg = NRI-R Short Form Negative Interactions Scale, [t] = $p < .10$

Behavioral characteristics of the friendship network. A MANOVA with Behavioral Characteristics of Friendship Network (BCFN) scores as dependent variables, and group as the fixed factor was significant ($F(9, 65) = 2.15$, $p < .05$, $\eta^2 = .23$). Univariate ANOVAs were significant for Percentage of Girl Friends Vomiting to Lose Weight and Percentage of Girl Friends with an ED. In comparison to adolescents in the ED group, adolescents in the DD group reported that a significantly smaller percentage of their friends engaged in self-induced vomiting or had ED. Typical developing adolescents did not differ from adolescents in the DD or ED group on either of these variables. Means and standard deviations for BCFN scores, F-tests, and effect sizes are presented in Table 6.

To follow-up on the significant correlations between BCFN and BMI z-scores and age the above analyses were repeated twice. First, the analyses were repeated with both age and BMI z-scores entered as covariates. Second, the analyses were repeated with only BMI z-scores entered as the covariate. The MANCOVA with Behavioral Characteristics of Friendship Network (BCFN) scores as dependent variables, group as the fixed factor, and age and BMI z-scores as the covariates was not significant ($F(9, 60) = 1.63$, $p > .10$, $\eta^2 = .20$). Similarly, the MANCOVA with Behavioral Characteristics of Friendship Network (BCFN) scores as dependent variables, group as the fixed factor, and BMI z-scores as the covariate was not significant ($F(9, 61) = 1.70$, $p > .10$, $\eta^2 = .20$).

Table 6. Comparison of typically developing, DD group, and ED group on the BCFN

	Typical (n=25) M (SD)	DD (n=25) M (SD)	ED (n=25) M (SD)	F	η^2
% Vomiting to Lose Weight	3.80 (8.93) ^{AB}	0.40 (2.00) ^{B}	9.0 (17.67) ^{A}	3.55*	.09
% have ED	2.64 (8.22) ^{AB}	0.67 (3.33) ^{B}	10.04 (17.22) ^{A}	4.88**	.12
% on a Diet	22.10 (25.08)	19.90 (31.20)	18.10 (22.29)	.14	.00
% Talking about Dieting	30.13 (24.74)	31.84 (33.83)	37.04 (31.24)	1.05	.03
% Exercising to Lose Weight	30.55 (27.58)	24.61 (35.34)	28.54 (29.91)	.24	.01
% Think important to be thin	33.42 (37.66)	22.04 (33.30)	37.97 (34.40)	.69	.02
% Wanting to Lose Weight	33.63 (27.51)	37.09 (37.23)	37.05 (30.86)	.34	.01
% Encouraging Dieting	6.42 (12.23)	15.22 (30.20)	4.47 (10.70)	2.05	.05
% Complaining Fat	34.19 (25.61)	27.71 (30.93)	41.02 (29.27)	1.95	.05

Note. * $p<.05$, ** $p<.01$, ***$p<.001$, different superscripts denote significant pairwise comparisons, $p<.05$.

Loneliness and Social Anxiety.

An ANOVA comparing groups on Loneliness scores was significant ($F(2, 72) = 3.53$, $p < .05$, $\eta^2 = .09$). Pairwise comparison revealed that adolescents with ED reported significantly greater loneliness than typically developing adolescents. Loneliness scores of adolescents in the DD group did not differ from either group. Means and standard deviations for loneliness, F-tests, and effect sizes appear in Table 7.

A MANOVA was performed with SAS-A subscales (e.g., Fear of Negative Evaluation (FNE), Social Avoidance and Distress – New (SAD-New), Social Avoidance and Distress – General (SAD-General)) as the dependent variables and group as the fixed factor was significant ($F(3, 71) = 3.93$, $p < .05$, $\eta^2 = .14$). Subsequent univariate ANOVAs demonstrated a significant group differences for FNE, and a trend for SAD-New. Pairwise comparisons revealed that adolescents with DD reported significantly greater FNE scores than typically developing adolescents. FNE scores of adolescents in the ED group did not differ from either group. Means and standard deviations for SAS-A subscales, as well as F-tests and effect sizes, are presented in Table 7.

Table 7. Loneliness and SAS-A scores for typically developing adolescents, adolescents with DD, and adolescents with ED

	Typical (n=25) M (SD)	DD (n=25) M (SD)	ED (n=25) M (SD)	F	η^2
Loneliness	1.67 (.48) ^{A}	1.98 (.60)^{AB}	2.14 (.78) ^{B}	3.53*	.09
SAS-A					
FNE	16.56 (7.69) ^{A}	24.88 (8.82) ^{B}	22.18 (9.60) ^{AB}	5.80**	.14
SAD-New	15.56 (6.63)	19.16 (7.02)	14.92 (6.96)	2.75 (trend)	.07
SAD-General	7.40 (3.49)	9.96 (4.37)	8.52 (4.79)	2.28	.06

Note. SAS-A = Social Anxiety Scale for Adolescents, FNE = Fear of Negative Evaluation, SAD-New = Social Avoidance and Distress – New Situations, SAD-General = Social Avoidance and Distress - General, * $p<.05$, ** $p<.01$, ***$p<.001$, different superscripts denote significant pairwise comparisons, $p<.05$.

Summary of Purpose 1 Results

Overall there were fewer than hypothesized differences in peer adjustment between the three groups. In particular, adolescents with ED rarely differed from typically developing adolescents. As hypothesized, relative to typically developing adolescents, those with ED described greater loneliness and there was a trend for them to endorse having a fewer number of friends. Relative to typically developing adolescents, those with DD described feeling less accepted by their peers and greater fears of negative evaluations. Contrary to hypotheses, the two clinical groups were comparable on most variables including; body dissatisfaction, depressive symptoms, perceived acceptance, relational aggression and victimization, number of friends, qualities that characterized their closest friendship, loneliness, and social anxiety. The only peer adjustment variable that significantly distinguished the two clinical groups was the extent to which their friends were engaging in disordered eating. As hypothesized in comparison to adolescents with DD, the peer groups of adolescents with ED were characterized by more disordered eating (e.g., greater percentage of friends with ED and vomiting to lose weight). Levels of disordered eating amongst the friends of typically developing teens did not differ from either clinical group. Overall group differences on the BCFN were no longer significant after controlling for age and BMI.

Purpose 2. To examine the impact of comorbid ED and DD on peer adjustment.

More than half of the adolescents in the ED group (n=14, 56%) met diagnostic criteria for a comorbid DD. Therefore, to examine the impact of comorbid DD on adolescents with ED peer adjustment the analyses presented above for purpose 1 were repeated comparing the following groups: typically developing adolescents (n=25),

adolescents with ED (EDonly group, n=11), adolescents with depressive disorders (DD group, (n=25), and adolescents with comorbid eating and depressive disorders (COMOR, n=14) .

Comparing Age, BMI, EDI, and BDI

A MANOVA with age and BMI z-scores as the dependent variables and group as the fixed factor was significant ($F(3, 68) = 8.39$, $p<.001$, $\eta^2 = .27$). Subsequent univariate ANOVA's found no significant group differences for age. The univariate ANOVA for BMI z-scores revealed significant group differences. Adolescents in the EDonly and COMOR group had a significantly lower BMI z-scores compared to adolescents in the DD group. Means and standard deviations for age, BMI z-scores, F-tests, and effect sizes are presented in Table 8.

A MANOVA with EDI scores (e.g., Drive for Thinness (DT), Body Dissatisfaction (BD), and Bulimia (B)) as the dependent variables and group as the fixed factor was significant ($F(3, 71) = 16.51$, $p<.001$, $d=.41$). Subsequent univariate ANOVAs revealed significant group differences for each subscale. Adolescents in the EDonly and COMOR group did not differ on any of the EDI scores. As expected, relative to adolescents in the typically developing group, adolescents in the COMOR group had significantly higher EDI DT, BD, and B subscale scores. Adolescents in the EDonly group had significantly higher EDI DT scores relative to typically developing adolescents.

An ANOVA with BDI scores as the dependent variable and group as the fixed factor was significant. Planned pairwise comparisons revealed that adolescent in the EDonly group had significantly lower BDI scores than adolescents in the COMOR group.

Differences between adolescents in the EDonly and typically developing group, and the DD and COMOR group were not significant. Typically developing adolescents had significantly lower BDI scores than adolescents in the DD and COMOR group and did not differ from adolescents in the EDonly group. Means and standard deviations for EDI and BDI scores, as well as F-tests and effect sizes, are presented in Table 8.

Table 8. Age and BMI for typically developing adolescents and adolescents with EDonly, DD, and comorbid ED and DD

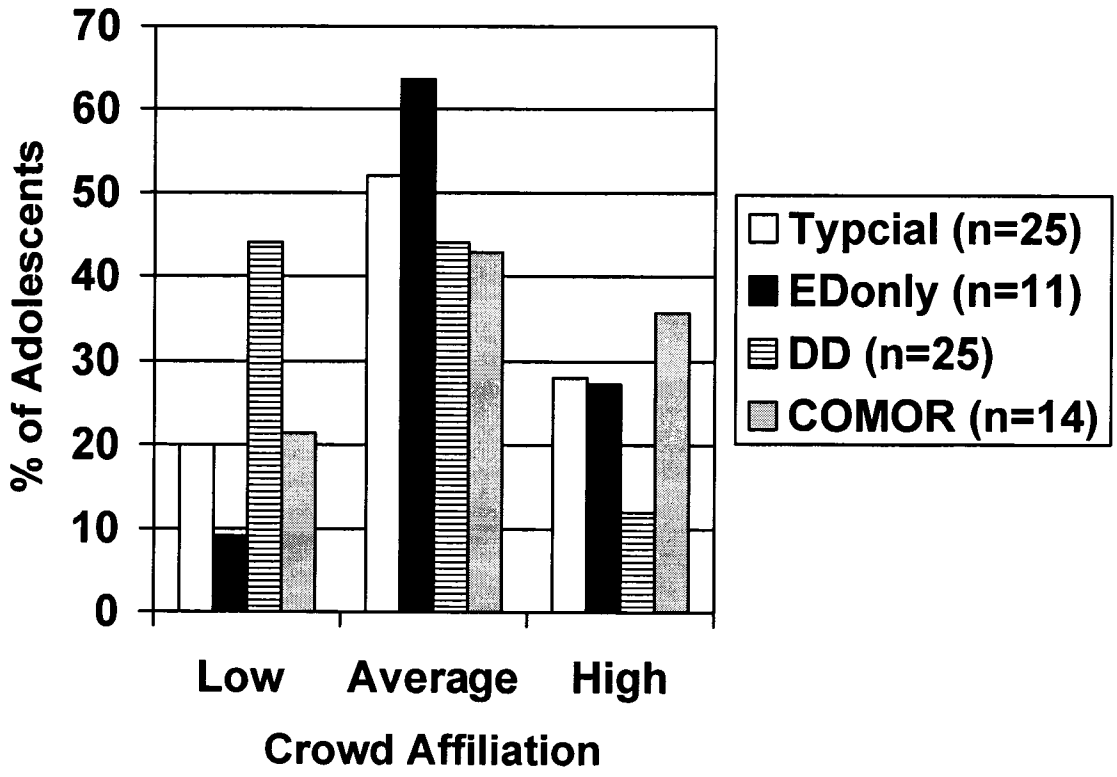
	Typical (n=25) M(SD)	EDonly (n=11) M (SD)	DD (n=25) M (SD)	COMOR (n=14) M (SD)	F	η^2
Age	15.00 (1.82)	15.00 (2.05)	15.70 (1.74)	15.71 (1.44)	.95	.04
BMI	.40 (1.03) ^{AB}	-.28 (1.40) ^{A}	1.12 (.93) ^{B}	-.47 (1.01) ^{A}	8.17***	.27
EDI						
DT	4.44 (3.27) ^{A}	9.73 (5.82) ^{BC}	6.80 (4.72) ^{AB}	13.43 (4.07) ^{C}	13.92***	.37
B	1.28 (1.84) ^{A}	3.27 (3.93) ^{AB}	2.28 (2.37) ^{A}	6.21 (5.63) ^{B}	6.96***	.23
BD	7.48 (5.12) ^{A}	13.09 (6.67) ^{AB}	11.48 (6.15) ^{AB}	16.00 (6.85) ^{B}	6.24**	.21
BDI	6.76 (3.96) ^{A}	13.27 (7.77) ^{AB}	21.08 (12.48) ^{BC}	30.14 (14.94) ^{C}	17.41***	.42

Note. BMI = Body Mass Index, EDI = Eating Disorders Inventory – 2, DT = Drive for Thinness, B = Bulimia, BD = Body Dissatisfaction, BDI = Beck Depression Inventory II, * $p<.05$, ** $p<.01$, ***$p<.001$, different superscripts denote significant pairwise comparisons, $p<.05$.

Experiences within the Peer Group.

Peer crowd. The results indicated no differences in crowd affiliation between typically developing adolescents, adolescents with ED, and DD (χ^2 (6) = 7.92, p > .10). Percentage of adolescents in each group affiliated with low, average, and high status crowds are displayed in Figure 2.

Figure 2. Percentage of adolescents affiliating with low, average, and high status crowds by group (typical, EDonly, DD, and COMOR)



Perceived acceptance. An ANOVA comparing groups Self-Perception Profile for Adolescents PAS scores was significant. Follow-up pairwise comparisons revealed that adolescents in the ED only group had significantly higher PAS scores than both the adolescents in the DD and COMOR groups, and comparable scores to typically developing adolescents. PAS scores of the Typical, DD, and COMOR groups did not differ. Means and standard deviations for PAS scores, as well as F-tests and effect sizes, are presented in Table 9.

Relational Aggression and Victimization. A MANOVA comparing the three groups on subscale from the Revised Peer Experiences Questionnaire (RPEQ; e.g., reputational aggression and victimization, and relational aggression and victimization) was significant ($F(4, 70) = 3.23$, $p < .05$, $\eta^2 = .16$). Subsequent univariate ANOVAs revealed significant group differences for Relational Victimization and a trend for Reputational Victimization. Adolescents in the EDonly group had significantly lower Relational Victimization scores than both other clinical groups, and their scores did not differ from typically developing adolescents. Relational Victimization scores of the DD and COMOR groups did not differ. Means and standard deviations for RPEQ scores, F-tests, and effect sizes appear in Table 9.

To follow-up on the trend level correlation between RPEQ reputational aggression and BMI z-scores, a MANCOVA comparing the three groups on subscale from the Revised Peer Experiences Questionnaire (RPEQ; e.g., reputational aggression and victimization, and relational aggression and victimization) with BMI z-scores entered as a covariate was conducted. Consistent with the above results, the MANCOVA was significant ($F(4, 66) = 3.83$, $p < .01$, $\eta^2 = .19$). Subsequent univariate ANCOVAs

revealed significant group differences for Relational Victimization and Reputational Victimization ($F(4, 67) = 3.97$, $p < .01$, $\eta^2 = .19$ and $F(4, 67) = 2.40$, $p < .05$, $\eta^2 = .13$). Results of follow-up pairwise comparisions of Relational Victimization scores were the same with and without controlling for BMI z-scores. That is, after controlling for BMI z-scores adolescents in the EDonly group had significantly lower Relational Victimization scores than both other clinical groups, and their scores did not differ from typically developing adolescents. Relational Victimization scores of the DD and COMOR groups did not differ. After controlling for BMI z-scores, adolescents in the EDonly group had significantly lower Reputational Victimization scores than each other group. Reputational Victimization scores of typically developing adolescents and the DD and COMOR groups did not differ.

Table 9. Mean PAS and RPEQ scores for typically developing adolescents and adolescents with EDonly, DD, and comorbid ED and DD

	Typical (n = 25) M(SD)	EDonly (n = 11) M (SD)	DD (n = 25) M (SD)	COMOR (n = 14) M (SD)	F	η^2
PAS	3.18 (.67) ^{AB}	3.56 (.32) ^{A}	2.59 (.77) ^{B}	2.56 (.86) ^{B}	7.09***	.23
RPEQ						
Relational Aggression	1.91 (.65)	1.97 (.60)	1.99 (.73)	1.95 (.73)	.06	.00
Reputational Aggression	1.56 (.53)	1.30 (.60)	1.63 (.72)	1.55 (.76)	.63	.03
Relational Victimization	2.13 (.76) ^{AB}	1.64 (.84) ^{A}	2.63 (.82) ^{B}	2.50 (1.03) ^{B}	4.08 *	.15
Reputational Victimization	2.21 (.99)	1.51 (.75)	2.31 (.76)	2.45 (1.15)	2.49^{t}	.10

Note. PAS = Self-Perception Profile for Adolescents Social Acceptance scores, RPEQ = Revised Peer Experiences Questionnaire,

* p<.05, ***p<.001, ^{t} = p<.10, different superscripts denote significant pairwise comparisons, p<.05.

Experiences with close friends.

Quantity and quality of friendships. ANOVAs comparing groups on number of friends identified and duration of closest female friendship were not significant ($F(3, 71) = 1.75$, $p>.10$, $d=.07$ & $F(3, 71) = .27$, $p>.10$, $d=.01$, respectively).

Two MANOVAs, the first with the positive quality subscales from the NRI-R and the second with the negative quality subscales of the NRI-R as dependent variables, and group as the fixed factor were not significant ($F(9,64) = 1.55$, $p > .10$, $\eta^2 = .18$ & $F(4, 69) = 2.33$, $p > .05$, $\eta^2 = .12$, respectively). A MANOVA comparing groups on NRI-R SSF and NIF scores was not significant ($F(3, 70) = 1.92$, $p > .10$, $\eta^2 = .07$). A MANOVA comparing groups on the SF-support and SF -neg scores was significant ($F(3, 70) = 4.15$, $p < .01$, $\eta^2 = .15$). Adolescents in the EDonly group reported significantly higher SF-support scores than adolescents in COMOR group. No other group differences were significant. Means and standard deviations for NRI-R SF-support and SF-neg scores, as well as F-tests and effect sizes, appear in Table 10.

Table 10. NRI-R SF-support and SF – neg interactions for typically developing adolescents and adolescents with EDonly, DD, and comorbid ED and DD.

	Typical (n = 25) M(SD)	EDonly (n = 11) M (SD)	DD (n = 25) M (SD)	COMOR (n = 14) M (SD)	F	η^2
SF-support	4.13 (.96) ^{AB}	4.27 (.71)^{B}	3.73 (.87)^{AB}	3.35 (.94)^{A}	3.23*	.12
SF-neg	2.07 (.88)	1.25 (.50)	1.99 (.98)	1.73 (.87)	1.99	.08

Note. SF-support = NRI-R Short Form Support Scale and SF-neg = NRI-R Short Form Negative Interactions Scale, * = p <.05

To follow-up on the significant correlations between NRI-R scores and BMI z-scores, the above MANOVAs were repeated with BMI z-scores as the covariate. The MANCOVA for the positive and negative quality subscales was not significant ($F (9, 64) = 1.55$, $p > .10$, $\eta^2 = .18$, ($F (4, 65) = 1.55$, $p > .10$, $\eta^2 = .18$, respectively). Similarly, the MANCOVA comparing groups on NRI-R SSF and NIF scores was not significant ($F (3, 66) = 2.06$, $p > .10$, $\eta^2 = .09$). Consistent with the results above, the MANCOVA comparing groups on the Short Form support and negative interactions scores was significant ($F (3, 66) = 3.99$, $p < .05$, $\eta^2 = .15$) as was the univariate ANOVA for the Short Form support score ($F (4, 66) = 3.51$, $p < .05$, $\eta^2 = .18$). Follow-up pairwise comparisons revealed the adolescents in the EDonly group had significantly higher Short Form support scores relative to both other clinical groups, and comparable scores to typically developing adolescents (p's <.05). The Short Form support scores of adolescents in the DD and COMOR groups did not differ. Relative to typically developing adolescents, adolescents in the COMOR and DD groups reported significantly lower Short Form support scores ($p < .05$). The univariate ANOVA for the Short Form negative interactions score was not significant ($F (4, 66) = 1.58$, $p > .10$, $\eta^2 = .09$).

Behavioral Characteristics of the Friendship Network. A MANOVA comparing groups on the BCFN scores was significant ($F (9, 65) = 2.16$, $p < .05$, $\eta^2 = .23$). In comparison to adolescents in the COMOR group, adolescents in the typical and DD group described a significantly smaller percentage of their friends as engaging in self-induced vomiting or as having an eating disorder. Relative to the adolescents in the

EDonly group, adolescents in the DD group also reported having a fewer percentage of friends with ED. No other significant group differences were revealed. Means and standard deviations for BCPN scores, as well as F-tests and effect sizes, are presented in Table 11.

Table 11. BCFN for typically developing adolescents and adolescents with EDonly, DD, and comorbid ED and DD

	Typical (n = 25) M (SD)	ED (n = 11) M (SD)	DD (n = 25) M (SD)	COMOR (n = 14) M (SD)	F	H^2
% Vomiting to Lose Weight	3.80 (8.93) [A]	5.30 (11.95) [AB]	0.40 (2.00) [A]	11.90 (21.11) [B]	3.09*	.12
% have ED	2.64 (8.22) [AC]	9.39 (13.38) [AB]	0.67 (3.33) [C]	10.54 (20.21) [B]	3.23*	.12
% on a Diet	22.10 (25.08)	14.70 (18.36)	19.90 (31.20)	20.73 (25.31)	.20	.01
% Talking about Dieting	30.13 (24.74)	28.80 (29.42)	31.84 (33.83)	43.52 (32.13)	.73	.03
% Exercising to Lose Weight	30.55 (27.58)	23.48 (25.22)	24.61 (35.34)	27.16 (27,34)	.22	.01
% Think important to be thin	33.42 (37.66)	23.03 (34.54)	22.04 (33.30)	31.85(35.08)	.56	.02
% Wanting to Lose Weight	33.63 (27.51)	31.06 (27.01)	37.09 (37.23)	41.75 (33.81)	.29	.01
% Encouraging Dieting	6.42 (12.23)	0	15.22 (30.20)	7.98 (13.46)	1.69	.07
% Complaining Fat	34.19 (25.61)	39.70 (28.88)	27.71 (30.93)	35.31 (29.78)	.90	.04

To follow-up on the significant correlations between BCFN and BMI z-scores and age the above analyses were repeated twice. First, the analyses were repeated with both age and BMI z-scores entered as covariates. Second, the analyses were repeated with only BMI z-scores entered as the covariate. There was a trend towards significance for the MANCOVA with Behavioral Characteristics of Friendship Network (BCFN) scores as dependent variables, group as the fixed factor, and age and BMI z-scores as the covariates was not significant ($F (9, 60) = 1.72$, $p < .10$, $\eta^2 = .21$). There was also a trend towards significance for the MANCOVA with Behavioral Characteristics of Friendship Network (BCFN) scores as dependent variables, group as the fixed factor, and BMI z-scores as the covariate ($F (9, 61) = 1.74$, $p < .10$, $\eta^2 = .21$). There were trends for the univariate ANCOVAs for Percentage of Girl Friends Vomiting to Lose Weight and Percentage of Girl Friends with and Eating Disorder to be significant ($F (4, 67) = 2.16$, $p < .10$, $\eta^2 = .11$ and $F (4, 67) = 2.34$, $p < .10$, $\eta^2 = .12$). After controlling for BMI z-scores, follow-up pairwise comparisons revealed that adolescents in the COMOR and ED only groups reported that a significantly greater percentage of their friends had an ED relative to adolescents with DD. In addition, after controlling for BMI z-scores, relative to typically developing adolescents and adolescents with DD, adolescents in the COMOR group reported that a significantly greater percentage of their girl friends were vomiting to lose weight. The univariate ANCOVA for Percentage of Girl Friends Encouraging Dieting was significant ($F (4, 67) = 2.72$, $p < .05$, $\eta^2 = .14$), but follow-up pairwise comparisons revealed no significant group differences.

Loneliness and Social Anxiety.

An ANOVA comparing groups on Loneliness scores was significant, $F(3, 71) = 8.49$, $p < .001$, $\eta^2 = .26$ (see table 12). Pairwise comparison revealed that adolescents in the COMOR group reported significantly greater loneliness than adolescents in the typical, EDonly, and DD groups. Whereas Loneliness scores of the remaining three groups did not differ.

A MANOVA was performed with SAS-A subscales (e.g., FNE, SAD-New, SAD-General) as the dependent variables and group as the fixed factor. An overall significant group effect was found ($F(3, 71) = 8.44$, $p < .001$, $\eta^2 = .26$). Subsequent univariate ANOVAs demonstrated a significant group difference for each of the subscales. Pairwise comparisons revealed the EDonly group had significantly lower FNE, SAD-New, and SAD-General subscale scores compared to adolescents in both the DD and COMOR groups. Typically developing adolescents and adolescents in the EDonly group did not differ significantly on any of the SAS-A subscales. Means and standard deviations for Loneliness and SAS-A subscales, as well as F-tests and effect sizes, are presented in Table 12.

Table 12. Loneliness and SAS-A scores for adolescents with EDonly, DD, and comorbid ED and DD

	Typical (n = 25) M (SD)	ED (n = 11) M (SD)	DD (n = 25) M (SD)	COMOR (n = 14) M (SD)	F	η^2
Loneliness	1.67 (.48) ^{A}	1.61 (.34) ^{A}	1.98 (.60) ^{A}	2.56 (.79) ^{B}	8.49***	.26
SAS-A						
FNE	16.56 (7.69) ^{A}	16.69 (6.87) ^{A}	24.88 (8.18) ^{B}	26.49 (9.40) ^{B}	7.19***	.23
SAD-New	15.56 (6.63) ^{AB}	11.45 (4.39) ^{A}	19.16 (7.02) ^{B}	17.64 (7.51) ^{B}	3.71*	.13
SAD-General	7.40 (3.49) ^{AB}	5.27 (1.61) ^{A}	9.96 (4.37) ^{BC}	11.07 (4.94) ^{C}	6.26**	.21

Note. SAS-A = Social Anxiety Scale for Adolescents, FNE = Fear of Negative Evaluation, SAD-New = Social Avoidance and Distress – New Situations, SAD-General = Social Avoidance and Distress - General, * $p<.05$, ** $p<.01$, ***$p<.001$, different superscripts denote significant pairwise comparisons, $p<.05$.

Summary of Purpose 2 Results

In summary, across the majority of peer adjustment variables where there were significant between group differences, relative to adolescents in the DD or COMOR groups, adolescents in EDonly group had more adaptive experiences in their peer relationships (e.g., PAS, SAS-A, and Loneliness). For the RPEQ and NRI-R, differences were more pronounced after controlling for BMI z-scores. Specifically, after controlling for BMI z-scores adolescents in the ED only group described less relational and reputational victimization and greater support than adolescents in the COMOR and DD groups. In addition, adolescents in the EDonly group rarely differed from adolescents in the typically developing control group, and when they did they reported more adaptive peer adjustment (e.g., less relational victimization). Few differences were found between adolescents in the DD and COMOR groups. Notably, adolescents with comorbid ED and DD reported greater loneliness relative to adolescents in each other group, and the peer groups of adolescents in the COMOR groups were characterized by higher levels of disordered eating relative to adolescents in the typically developing and DD groups. The main effects for between-group differences in the behavioral characteristics of the friendship network were lessened after controlling for BMI. However, differences remained in the hypothesized directions and loss of significance could be attributed to a loss of power. Together these findings suggest that with the exception of the behavioral characteristics of adolescents' friendship networks and loneliness, relative to eating disorder symptoms, depressive symptoms or comorbidity may have a larger negative impact on peer adjustment.

Purpose 3. To examine ED symptom presentation and peer adjustment.

a) Anorexia Nervosa (AN) vs. Eating Disorder Not Otherwise Specified (EDNOS)

The majority of the participants in the ED group presented with either anorexia nervosa (AN; n = 9) or eating disorder not otherwise specified (EDNOS; n = 12); only four participants presented with bulimia nervosa (BN). A series of t-tests were used to compare adolescents with AN and EDNOS on each of the peer adjustment variables. Given the low number of participants presenting with BN these adolescents were not included in these analyses.

Means and standard deviations, as well as t-tests and effect sizes for those peer adjustment variables that differed significantly between adolescents with AN and EDNOS are presented in Table 13. Given the low number of participants in each group these results need to be interpreted with caution. Groups did not differ on age, EDI scores, or BDI scores suggesting that eating disorder and depressive symptom severity did not differ between the two groups. Six (66.67%) of the adolescents with AN had comorbid DD, and 4 (33.33%) of the adolescents with EDNOS had comorbid DD. There were too few adolescents in these groups to conduct a chi square analysis on crowd affiliation. Descriptively, no adolescents with AN reported affiliating with a high status crowd whereas 50% of adolescents with EDNOS described themselves as affiliated with a high status crowd. Seventy-seven and 41 percent of adolescents with AN and EDNOS, respectively described affiliating with average status crowds. Twenty-two and 8 percentage of adolescents with AN and EDNOS, respectively, described affiliating with low status crowds. Groups did not differ on number of friends, the negative qualities of their closest friendships, victimization, or loneliness. Overall, results suggest that in

comparison to participants with EDNOS, participants with AN feel less accepted by their peers, rate the positive qualities (e.g., companionship, intimacy, nurturance, affection, support) of their closest same-sex friendship less favorably, and experience greater social anxiety. In contrast, relative to participants with AN, participants with EDNOS endorsed having peer networks that were characterized by greater weight loss behaviors (e.g., percentage of girl friends exercising to lose weight and talking about dieting).

Table 13. Significant differences between participants with AN (n=9) and EDNOS (n=12) on peer adjustment variables.

	AN M (SD)	EDNOS M (SD)	t	df	p	Confidence Interval
BMI	-1.57 (.80)	.27 (.79)	-3.26	19	<.01	[-7.18, -1.56]
PAS	2.58 (.86)	3.45 (.65)	-2.65	19	<.05	[-1.56, -.18]
NRI-R						
Companionship	3.26 (1.13)	4.22 (.57)	-2.56	19	<.05	[-1.75, -.17]
Intimacy	2.89 (1.36)	4.28 (1.04)	-2.65	19	<.05	[-2.49, -.29]
Nurturance	2.74 (.95)	4.44 (.48)	-5.38	19	<.001	[-2.37, -1.04]
Affection	3.52 (.86)	4.58 (.49)	-3.57	19	<.01	[-1.69, -.44]
Support	2.56 (1.18)	4.08 (.95)	-3.29	19	<.01	[-2.50, -.55]
SSF	3.11 (.98)	4.16 (.51)	-2.94	19	<.05	[-1.75, -.37]
BCFN						
% exercising to lose weight	6.00 (11.85)	33.47 (23.73)	-3.18	19	<.01	[-45.63, -9.41]]
% talking about dieting	16.40 (25.36)	49.03 (32.54)	-2.49	19	<.05	[-60.06, -5.19]
SAS-A						
SAD-New	18.89 (5.86)	10.50 (4.46)	3.73	19	<.01	[3.68, 13.09]
SAD-General	10.77 (5.26)	5.83 (2.76)	2.57	19	<.05	[1.25, 8.64]

Note. BMI = Body Mass Index, PAS = Perceived Acceptance Scale, NRI-R = Network of Relationships – Revised, SSF = Social Support Factor score, BCFN = Behavioral Characteristics of Friendship Network, SAS-A = Social Anxiety Scale for Adolescents, SAD-New = Social Avoidance and Distress - New Situations, SAD-G = Social Avoidance and Distress – General

b) Adolescents who Purge (Purge) vs. Adolescents who do not Purge (no Purge)

Of the 25 adolescents with ED, 9 denied engaging in self-induced vomiting (no Purge) and 16 reported engaging in self-induced vomiting. Of the adolescents who denied self-induced vomiting, 7 (77.8%) met diagnostic criteria for AN, restricting type and 2 (22.2) met diagnostic criteria for EDNOS. Five (55.6%) of the adolescents in the no Purge group met diagnostic criteria for a comorbid DD. Of the adolescents who reported engaging in self-induced vomiting, 2 (12.5%) met diagnostic criteria for AN, binge-purge type, 4 (25%) met diagnostic criteria for BN, and 10 (62.5%) met diagnostic criteria for EDNOS. Nine (56.3%) of adolescents in the Purge group met diagnostic criteria for a comorbid DD.

A series of t-tests were conducted to compare adolescents who did and did not report self-induced vomiting. Means and standard deviations, as well as t-tests and effect sizes for those peer adjustment variables that differed significantly between adolescents who did and did not purge are displayed in Table 14. Given the low number of participants in each group these results need to be interpreted with caution. As expected, adolescents who engaged in self-induced vomiting had significantly higher EDI B scores relative to adolescents who did not engage in this behavior ($p<.05$). Groups did not differ on age, EDI DT or BD scores, or BDI scores suggesting that eating disorder (other than binge and purge behaviors) and depressive symptom severity did not differ between the two groups. There were too few adolescents in these groups to conduct a chi square analysis on crowd affiliation. Descriptively, no adolescents in the no Purge group reported affiliating with a high status crowd whereas 50% of adolescents in the Purge group described themselves as affiliated with a high status crowd. Eighty-nine and 31.3

percent of adolescents in the no Purge and Purge groups respectively described affiliating with average status crowds. Eleven and 18.75 percentage of adolescents in the no Purge and Purge groups respectively described affiliating with low status crowds. Groups did not differ on perceived acceptance, number of friends, the negative qualities of their closest friendships, victimization, social anxiety or loneliness. Overall, results suggest that in comparison to participants who do not purge, participants who purge have greater positive qualities associated with their close friendships but are also members of peer networks that were characterized by greater weight loss behaviors (e.g., percentage of girl friends exercising to lose weight and talking about dieting).

Table 14. Significant differences between participants with adolescents who do not purge (no Purge, n=9) and adolescents who do purge (n=16) on peer adjustment variables.

	No Purge M (SD)	Purge M (SD)	t	df	p	Confidence Interval
BMI	-1.10 (1.06)	.01 (1.06)	-2.50	23	<.05	-2.02, -.19
NRI-R						
Companionship	3.26 (1.13)	4.10 (.65)	-2.39	23	<.05	-1.58, -.11
Nurturance	3.00 (1.26)	4.23 (.59)	-3.34	23	<.01	-1.99, -.47
SF Support	3.22 (1.21)	4.05 (.64)	-2.26	23	<.05	-1.59, -.07
BCFN						
% exercising to lose weight	8.73 (13.14)	35.00 (26.83)	-2.74	23	<.05	-46.11, -6.43
% talking about dieting	18.25 (32.51)	47.60 (25.82)	-2.49	23	<.05	-54.77, -4.93
% dieting	5.95 (11.85)	24.90 (24.13)	-2.20	23	<.05	-36.78, -1.10
% wanting to lose weight	15.87 (26.97)	48.96 (26.75)	-2.96	23	<.01	-56.21, -9.96

Note. BMI = Body Mass Index, RPEQ = Revised Peer Experiences Questionnaire, NRI-R = Network of Relationships – Revised, SSF = Social Support Factor score, BCFN = Behavioral Characteristics of Friendship Network

Purpose 4. To Examine Eating Disorder Symptom Severity and Peer Adjustment.

The fourth purpose of this study was to determine the extent to which eating disorder symptoms are related to aspects of peer adjustment after controlling for the effects of symptoms of depression. First, using the entire sample, Pearson product moment correlations were conducted between all peer adjustment variables and EDI DT, B, and BD scores. Significant correlations are reported in Table 15. In general, BDI scores were negatively correlated with perceived acceptance and positively correlated with loneliness, and social anxiety, whereas EDI scores were negatively correlated with the positive qualities of close friendships, and positively correlated with the behavioral characteristics of the friendship network and loneliness. Second, a MANCOVA was performed with EDI DT, B, and BD as the dependent variables, crowd affiliation as the fixed factor, and BDI as the covariate. An overall significant group effect was found ($F(3, 70) = 5.33$, $p < .01$, $\eta^2 = .19$). Subsequent univariate ANCOVAs demonstrated a significant group difference for each of the EDI subscales. Adolescents affiliated with high status crowds reported higher DT and B scores than adolescents affiliated with average and low status crowds, and the latter two groups did not differ on these variables. Adolescents affiliated with high status crowds reported greater BD than adolescents affiliated with low status crowds. No other group differences were significant for BD. Means and standard deviations for EDI DT, B, and BD for each crowd, as well as F-tests and effect sizes, are presented in Table 16. Finally, partial correlations were conducted between EDI scores and peer adjustment variables, controlling for BDI scores (see Table 17). Most notably, both correlational analyses suggest that eating disorder thoughts and behaviors amongst friendship networks may be uniquely related to eating disorder

symptoms, whereas social anxiety and loneliness may be more strongly related to depressive rather than eating disorder symptoms.

Table 15. Correlations between BDI and EDI scores and peer adjustment variables

	BDI	EDI - DT	EDI-B	EDI-BD
Perceived Acceptance	-.44***			
RPEQ				
Relational Victimization	.25*			
Reputational Victimization	.23*			
NRI-R				
Instrumental Aid		-.30**		
Support	-.31**	-.25*		-.25*
Support Factor		-.24*		
SF Support		-.24*		
BCFN				
% Complaining Fat		.24*	.26*	
% Talking about Dieting		.25*	.30**	.27*
% Vomiting to Lose Weight			.37***	
% Wanting to Lose Weight			.31**	.25*
% ED		.24*	.37***	
Loneliness	.66***	.37***	.30**	.38***
SAS-A				
FNE	.50***	.43***		.36**
New	.38***			
General	.51***			

Note. * p<.05, **p<.01, ***p<.001

Table 16. EDI scores by crowd affiliation, controlling for BDI

	Low Status (n = 20) M (SD)	Average Status (n = 37) M (SD)	High Status (n = 18) M (SD)	F	η^2
EDI					
DT	7.35 (5.16) ^{A}	6.81 (5.18) ^{A}	9.83 (5.67) ^{B}	12.49***	.35
B	2.35 (2.80) ^{A}	2.03 (3.42) ^{A}	5.00 (4.4.1) ^{B}	10..97***	.30
BD	10.65 (6.47) ^{A}	10.43 (6.19) ^{AB}	12.50 (8.07) ^{B}	12.69***	.35

Note. EDI = Eating Disorders Inventory – 2, DT = Drive for Thinness, B = Bulimia, BD = Body Dissatisfaction, * p<.05, ** p<.01, ***p<.001, different superscripts denote significant pairwise comparisons, p<.05.

Table 17. Significant partial correlations between EDI subscales and peer adjustment variables controlling for BDI

	EDI - DT	EDI-B	EDI-BD
Perceived Acceptance		.24*	
RPEQ			
Relational Victimization		-.24*	
NRI-R			
Instrumental Aid	-.27*		
BCFN			
% Complaining Fat		.23*	
% Talking about Dieting		.28*	.25*
% Vomiting to Lose Weight		.36***	
% Wanting to Lose Weight		.26**	
% ED	.25*	.39***	

Note. * p<.05, **p<.01, ***p<.001

DISCUSSION

The overall objective of this study was to comprehensively examine the peer adjustment of adolescents with ED utilizing developmentally appropriate measures and appropriate control groups. Overall, comparisons between typically developing adolescents, adolescents with ED, and adolescents with DD yielded few significant differences. The extent to which adolescents' peer groups were characterized by high levels of eating disorder symptoms was the primary variable differentiating adolescents in the ED group from adolescents in the DD group. However, there were a large number of adolescents with comorbid ED and DD. Adolescents with these comorbid disorders reported the most impaired peer adjustment, particularly with respect to loneliness. The peer adjustment of adolescents with ED but no comorbid depressive disorder did not differ from typically developing adolescents, and was more adaptive than both other clinical groups. Adolescents with AN were the only group to describe difficulties in their intimate friendships including deficits in support.

Collapsing across groups and controlling for symptoms of depression, greater eating disorder symptoms were related to affiliation with high status crowds, greater perceived acceptance, and belonging to friendship networks characterized by high levels of eating disordered thoughts and behaviors. In contrast, after controlling for symptoms of depression there were no significant relationships between loneliness or social anxiety and eating disorder symptoms. Based on these findings it seems that depression rather than eating disorder symptoms may be more strongly related to social anxiety and loneliness.

Purpose 1. To examine whether the peer adjustment of female adolescents with ED differs from that of adolescents with DD and typically developing adolescents.

Based on the reviewed literature it was expected that on average adolescents with ED would report affiliating with high or average status crowds and feel highly accepted by their peer group. However, it was also expected that they would report high levels of relational aggression and victimization, describe having few friends, and that their closest friendship would be characterized by low levels of positive qualities and high levels of negative qualities. It was further expected that there would be high levels of eating disorder thoughts and behaviors amongst the friends of adolescents with ED. Finally, it was expected that despite their high level of functioning at the peer group level, adolescents with ED would describe feeling lonely and anxious in social situations.

As expected, the ED group reported a greater desire to be thin and more bulimic symptomatology than typically developing adolescents and adolescents in the DD group. Body dissatisfaction scores of the ED and DD group were comparable, supporting the idea that body image problems are strongly related to feelings of depression in adolescent girls. At the level of the peer group, the number of adolescents with ED affiliating with high or average status crowds, the extent to which they felt accepted by their peer group, and their experiences with social aggression and victimization were similar to typically developing adolescents. Although not a significant difference, more adolescents in the DD group described affiliating with a low status crowd. In addition, adolescents with DD described feeling significantly less accepted relative to typically developing adolescents. There were no differences between these groups on social aggression or victimization. Thus, at the level of the peer group, adolescents with ED are functioning as well as

typically developing adolescents whereas adolescents with DD experience some difficulties.

With respect to friendships, the positive qualities of the three groups' close friendships did not differ but there was a trend for adolescents with ED to describe fewer negative interactions in their close friendships relative to both other groups. Although not examined in the current study, it may be that adolescents' with ED difficulties expressing emotion and anger with peers (e.g., Pike, 1995) limits the extent to which they argue with friends. This could be problematic if these adolescents are not asserting themselves or extensively sacrificing their own needs in order to preserve the relationship. In comparison to adolescents with DD, the percentage of adolescents with ED friends who were engaging in self-induced vomiting or who had an eating disorder was greater.

Finally, despite similarities in crowd affiliation and perceived acceptance between typically developing adolescents and adolescents with ED, adolescents with ED described feeling significantly more lonely. Moreover, despite adolescents' with DD greater impairments at the peer group level, loneliness did not differ between adolescents with ED and DD. This suggests that adolescents with ED may not be experiencing the same benefits associated with affiliating with average or high status crowds, or feeling accepted by one's peer group as typically developing adolescents. This finding supports research with adults with ED suggesting that these individuals may have a tendency to be hypersensitive to interpersonal interactions (Atlas, 2004; Steiger, et al., 1999). Thus adolescents with ED might interpret similar levels of acceptance differently than typically

developing adolescents. Unexpectedly, levels of social anxiety were comparable between typically developing adolescents and adolescents with ED.

Purpose 2. To examine the impact of comorbid ED and DD on peer adjustment.

Approximately half of the sample of adolescents with ED (n=14, 56%) had comorbid DD. With the exception of the behavioral characteristics of adolescents' friendship network, comparisons between adolescents with ED with and without comorbid DD suggest that comorbid DD intensifies the risk of problems in peer adjustment. Specifically, relative to adolescents with ED, adolescents with comorbid ED and DD reported less perceived acceptance from their peer group, more relational victimization, less support from their friends, greater loneliness, and elevated levels of social anxiety. Moreover, relative to adolescents with DD, adolescents with comorbid ED and DD reported greater loneliness and more problematic behaviors amongst their peers. Finally, adolescents with ED who were *not* experiencing DD did not differ from typically developing adolescents on any of the peer adjustment variables assessed. Research suggests that approximately one third of individuals with ED will develop chronic ED (Pike, 1998; Strober, Freeman, & Morrell, 1997). Consistent with the adult literature suggesting that better pretreatment social adjustment may be related to the reduction of symptoms over time (e.g., Keller, Herzog, Lavori, Bradbum, & Mahoney, 1992; Saccomani, Savoini, Cirrincione, Vercellino, & Ravera, 1998; Steiger, Leung, & Thibaudeau, 1993) it may be that adolescents with comorbid difficulties are least likely to recover as they may be lacking the support necessary.

Purpose 3. To examine ED symptom presentation and peer adjustment. AN and EDNOS.

At each of the sites, including the ED program at the University of Chicago, there was a significant portion of adolescents with a diagnosis of EDNOS (n = 12, 48%). This finding is consistent with the literature where it has been suggested that approximately 50% of young people presenting for ED treatment do not meet the DSM-IV criteria for AN or BN (Nicholls, Chater, & Lask, 2000; Robin, 2003). One goal of diagnostic categories described in the DSM-IV is to predict correlates of different symptom presentations. Therefore, research that examines differences in adjustment between individuals with different symptom presentation is needed to determine the validity of the current diagnostic system. As such, differences in peer adjustment between adolescents with AN and EDNOS were examined. Unfortunately, because only four adolescents presenting with BN were recruited for the current study they could not be included in these between group analyses. Of note, the limited number of adolescents with AN and EDNOS limits the conclusiveness of the findings.

Despite these caveats, the peer adjustment of adolescents with AN and EDNOS differed in many respects. Importantly, these groups did not differ on severity of eating disorder or depressive symptoms as assessed by the EDI and BDI. Overall, relative to adolescents with EDNOS, adolescents with AN experienced more difficulties in peer adjustment. More specifically, results suggest that the close friendships of adolescents with AN are characterized by low levels of companionship, intimacy, nurturance, affection, and support. In the present study, this was one of only two between group comparison where the positive qualities associated with close friendships differed.

Previous research with adults with BN suggests that avoidance of intimacy and closeness were related to relapse (Wasson, 2003), and having close friends was predictive of recovery (Herzog, et al., 1992). Conversely, several studies failed to find a significant relationship between the positive qualities of friendships and eating disorder symptoms in female undergraduate and high school samples (Grissett & Norvell, 1992, Thelen, Farmer, Mann, & Pruitt, 1990), and similarly that the level of intimacy in a clinical sample of adolescents with diverse presenting problems (not including ED) did not differ from typically developing adolescents (Claes, 1994). Thus, difficulties developing or maintaining close same-sex friendships may be one factor that differentiates AN and EDNOS developmental trajectories, and may be related to the development of full threshold AN or BN. Research specifically examining the positive qualities of the close friendships of adolescents with BN is needed.

In addition, adolescents with AN described greater avoidance and distress regarding social situations relative to their EDNOS peers. Moreover, the levels of avoidance and distress regarding social situations of participants with EDNOS were comparable to the mean scores of the high school students on which the SAS-A was normed (La Greca & Lopez, 1998). A fear of negative evaluation may be common to individuals across the spectrum of ED; however, avoidance and distress regarding social situations in this study was specific to adolescents with AN. Research with adults with AN and BN (see Bulik, 1995 for a review), and adolescents with AN (Zonnevylle-Bender, et al., 2004) suggest that social anxiety is common in these groups, and that social anxiety predated the eating disorder (e.g., Deep, et al., 1995). If this is true it suggests that it is unlikely that individuals with EDNOS will develop greater avoidance

and distress in social situations, and that this may be another factor that distinguishes individuals with AN from those with EDNOS. Again, research on social anxiety with adolescents with BN is needed.

In comparison to the peer adjustment of adolescents with AN, the peer adjustment of adolescents with EDNOS was more consistent with findings from risk factors research, particularly at the level of the peer group. That is, risk factors research suggests that affiliating with a high status crowd may be associated with high levels of disordered eating and shape and weight concerns (Lieberman, et al., 2001; Nichter & Vukovic, 1994; Thompson & Schwartz, 1982). Furthermore, risk factors research has either failed to find a relationship between acceptance and disordered eating (e.g., Gerner & Wilson, 2005; Paxton, et al., 1999), or reported a positive relationship between extreme weight loss behaviors such as self-induced vomiting and fasting (e.g., Paxton, et al., 1999) and greater body image concerns (e.g., McCabe, et al., 2002). In the present study, 50% of adolescents with EDNOS reported that they affiliated with either Jocks or Populars whereas none of the adolescents with AN endorsed affiliating with high status crowds. In addition, relative to adolescents with AN, adolescents with EDNOS described feeling significantly more accepted by their peer group. No other studies examining perceived acceptance or crowd affiliation in clinical samples of adolescents with ED were found.

In addition to acceptance and crowd affiliation, risk factors research suggests that there are groups of adolescents that can be characterized by high levels of disordered eating (Allison & Park, 2004; Lieberman, et al., 2001; Paxton, et al., 1999; Pike, 1995). In comparison to adolescents with AN, adolescents with EDNOS had a greater percentage of friends who talked about dieting, wanted to lose weight (16 vs. 49%,

respectively), and who were exercising to lose weight (6 vs. 33%, respectively). Adolescents with EDNOS reported that almost half of their friends complain that they are fat and want to lose weight (in comparison to 29 and 23%, respectively for adolescents with AN). It may be that once the symptoms of an eating disorder become more apparent to others, as is in the low weight of adolescents with AN, friends of adolescents with AN become more mindful of the risks associated with these behaviors and decrease them, or at least do not make them apparent to their affected friend. Alternatively, adolescents with AN might not belong to peer groups where disordered eating is common, or finally these adolescents might be underreporting their friends behavior. The current study suggests that findings regarding the association between peer adjustment at the level of the peer group might be even more relevant for adolescents at risk for developing EDNOS rather than AN.

It is curious that adolescents with EDNOS describe such adaptive peer adjustment given that they report comparable levels of ED symptomatology and depressive symptoms as adolescents with AN. It may be that the adolescents with EDNOS exaggerated the positive aspects and minimized the negative aspects of their peer relationships. Alternatively, their reports may accurately reflect some of the identified pros (i.e., valued) associated with having an ED that have been outlined in previous research. Specifically, "pros" identified by individuals with ED include increased attention from peers and a sense of achievement and control (Freedman, et al., 2006; Serpell & Treasure, 2002; Serpell, Treasure, Teasdale, & Sullivan, 1999). These "pros" could be congruent with feeling highly accepted by peers and having little anxiety in social situations. Moreover, because many of their friends are also engaging in similar

behaviors adolescents may feel that their ED provides them with a sense of belonging and a means of relating. Over time and with continued weight loss (as is the case with adolescents with AN) or with escalations of binge/purge behaviors the "cons" of the ED may also become more apparent. Adolescents may no longer attract positive attention from peers as their appearance deteriorates due to malnutrition. Additionally, if their symptoms escalate to meet criteria for AN or BN they will no longer be "normative" as the prevalence of these disorders is considerably lower than EDNOS (Nicholls, Chater, & Lask, 2000; Robin, 2003). Thus, the behaviors that once lent to a sense of group affiliation may differentiate them from their friends. Longitudinal research is needed to determine whether adolescents with EDNOS continue to demonstrate adaptive peer adjustment or with time they become more like adolescents with AN.

Purging vs Non-Purging.

In addition to comparing peer adjustment between adolescents with AN and EDNOS, between group comparisons were conducted between adolescents who do and do not engage in self-induced vomiting. There was significant overlap between adolescents in the AN group and adolescents who denied engaging in self-induced vomiting. However, the pattern of results did differ between analyses with fewer differences between adolescents who do and do not purge relative to between adolescents with AN and EDNOS. Specifically, differences in perceived acceptance, social anxiety, and some of the positive qualities associated with close friendships were no longer significant when comparing adolescents who do and do not purge. This may suggest that AN impacts these variables to a greater extent than purge status. The only variables that differed significantly between those who do and do not engage in self-induced vomiting

were the extent to which the peer group was characterized by high levels of disordered eating. Relative to adolescents who did not engage in self-induced vomiting, those who did had a significantly higher percentage of friends who talked about dieting, were dieting, wanted to lose weight, and were exercising to lose weight. Thus, purging rather than severe dietary restriction might be more conducive to social contagion. Relative to the severity of dietary restriction necessary to meet diagnostic criteria for AN, purging may be more similar to other behaviors that have been shown to be susceptible to social contagion such as smoking, doing drugs, or engaging in self-harming behaviors (Prinstein, Boergers, & Spirito, 2001). These behaviors could all be labeled as impulsive, and require the adolescent to engage in a behavior (e.g., purging) rather than avoid engaging in a behavior for a sustained period of time (e.g., eating). As such, the eating disordered behaviors of friends might be a risk factor for purging behaviors. In contrast, other individual factors such as obsessive personality traits or high levels of perfectionism may be risk factors for sustained severe restriction and these factors could also negatively impact adolescents peer relationships if they contribute to high levels of social anxiety and a rigid style of interacting with others.

Behavioral Characteristics of the Friendship Network

Research with at-risk samples suggests that friends tend to have more similar eating disorder thoughts and behaviors than non-friends (e.g., Paxton, et al., 1999) and that bulimic behaviors and weight become more similar between friends over time (e.g., Christakis & Fowler, 2007; Crandall, 1998; Zalta & Keel, 2006). No studies were found that examined the behavioral characteristics of friends of adolescents with ED. Findings in the current study are similar to previous research. Relative to typically developing

adolescents and adolescents with DD, the friendship networks of adolescents with comorbid ED and DD were characterized by higher numbers of friends with ED and friends engaging in self-induced vomiting. Adolescents in the ED only group reported having more friends with eating disorders relative to adolescents with DD. In addition, there was a trend for the behavioral characteristics of typically developing adolescents and adolescents with EDonly to differ, with more problematic thoughts and behaviors in the EDonly group.

It is not known whether adolescent friends become more similar in these thoughts and behaviors over time through socialization or whether adolescents select friends who are similar to themselves. Preliminary longitudinal research with college age students suggests that both processes occur (Zalta & Keel, 2006). However, students involved in the longitudinal research conducted to date were older than the current sample and lived in close proximity to each other (i.e., dormitories or sorority houses) and therefore there may have been more of an opportunity for modeling. Longitudinal research with younger populations is needed.

Further research is needed to determine how/why it is that friends become more similar in these behaviors over time. Eating disorder behaviors, particularly binge eating and purging, are often described as secretive. Findings from this study and previous research suggest that adolescents' friends are often aware of each other's behaviors in this domain. Moreover, adolescents' who purged generally had the highest level of disordered eating amongst their peer groups. With the advent of pro-anorexia websites and an increasingly thin body-ideal for women (e.g., Morris, Boydell, Pinhas, & Katzman, 2006) it may be that doing "whatever it takes" to lose weight may also be

becoming increasingly acceptable amongst adolescents. Adolescents who engage in binge and purge behaviors have described being able to consume high calorie/high fat foods without gaining weight as another "pro" associated with their ED (Serpell & Treasure, 2006). Thus, in some groups of adolescents that value a thin-body ideal engaging in self-induced vomiting might be viewed as an acceptable means of managing weight. The tendency to focus on the present during adolescence (Arnett, 2000) and the possibility that their friends are engaging in similar behaviors may mitigate concerns regarding the long-term health and psychological consequences of these behaviors.

In the current study and in previous research (Shroff & Thompson, 2006) adolescents' BMI was related to the extent to which their peer group was characterized by high levels of eating disordered thoughts and behaviors, and controlling for BMI negated some of the between group differences on the BCFN. Given that BMI varied by diagnostic status controlling for BMI may also have removed variance associated with the different diagnoses. Similar to previous research adolescents with average to low average BMIs reported the highest levels of disordered eating amongst their friends. Interestingly, relative to adolescents with AN who were extremely underweight, adolescents with EDNOS who were average weight reported that a greater percentage of their friends were talking about dieting and wanting to lose weight. Together, results suggest that BMI influences the extent to which adolescents' peer group is characterized by high levels of disordered eating. Alternatively, it may suggest that adolescents are sensitive to the weight status of their friends and may simply minimize the extent to which they *discuss* or *make apparent* their dissatisfaction with their bodies and weight loss attempts if they are friends with individuals who are extremely under or over weight.

Of note, the BCFN was developed for use in the current study and therefore little is known about the psychometric properties of the measure. Given the limited psychometrics of the measure the accuracy of adolescent's reports of their friend's behaviors is also not known. There is research to suggest that individuals tend to believe that their friends are more like them than is actually true. For instance, young adults who engage in problem drinking tend to overestimate the amount of alcohol that their peers consume (Monti, et al., 2007). However, as mentioned above this method of assessing adolescents' friends behaviors has been utilized in studies examining health-risk behaviors of adolescents (e.g., smoking, sexual activity, etc., see Dishion et al., 1991; Prinstein, et al. 2001), and the items were derived from those used in previous eating disorders risk factors research (e.g., Paxton, et al., 1999). Furthermore, in a large sample of high school students Dishion et al., 1991 reported that adolescent's perceptions of their friend's behaviors were similar to friend's actual reports. In the current study participants' estimates of the frequency of the different behaviors assessed (e.g., desire to lose weight, dieting, meeting diagnostic criteria for an eating disorders) were generally consistent with those reported in the literature. For example, on average participants reported that approximately 35.9% of their friends wanted to lose weight, 20.0% were on a diet, and 4.5% "had an eating disorder". Thus, the results based on the BCFN need to be interpreted with caution and future research is needed to examine the accuracy of adolescents' descriptions of their friends eating disordered behaviors.

Social Anxiety

The association between social anxiety and eating disorder symptoms was mixed, and varied somewhat based on the aspect of social anxiety being assessed. The measure

of social anxiety used in this study assessed fears regarding negative evaluations from others and the extent to which individuals feel distressed and avoid new social situations and social situations with peers in general. As a whole, adolescents with ED did not differ from typically developing adolescents on any of the areas of social anxiety assessed. In contrast, adolescents in the DD group described a greater fear of being negatively evaluated than typically developing adolescents. Differences emerged when the role of comorbid DD was examined. In comparison to those with ED alone, adolescents with comorbid ED and DD reported greater social anxiety across each of the areas assessed. However, adolescents with comorbid ED and DD described similar levels of avoidance and distress in situations as typically developing adolescents. Fear of negative evaluation was the only scale that differentiated comorbid adolescents from typically developing adolescents, and the DD and comorbid groups did not differ. In addition, after controlling for symptoms of depression the relation between fear of negative evaluation and eating disorder symptoms were no longer significant. Together, these findings suggest that having an ED in the absence of depressive symptoms may not be associated with social anxiety and that depressive symptoms may account for the elevated levels of social anxiety (a fear of negative evaluation in particular) generally reported in individuals with ED.

Depression and Peer Adjustment

Across areas assessed results of the current study suggest that depressive disorders negatively impact adolescents' peer adjustment regardless of whether depression is the primary diagnosis or an aspect of comorbid symptom presentation. In contrast, meeting diagnostic criteria for an eating disorder in the absence of a depressive

disorder did not have such an obvious negative impact on peer adjustment. Although past research has not examined peer adjustment in adolescents with eating disorders, the negative impact of depressive disorders on peer adjustment found in the current study is consistant with previous research. Specifically, research suggests that adolescents with emotional difficulties including depressive disorders are perceived as affiliating with low status crowds (Prinstein & La Greca, 2002) and experience low levels of social support and high levels of social anxiety and conflict with their friends (e.g., Claes, 1994; Kovacs, 1996; Mufson, et al., 1999). The cognitive distortions and negative automatic thoughts that are common amongst adolescents with depressive disorders likely have a negative impact on their interpretations of events, and contribute to their difficulties with their friends (Kovacs, 1996). In addition, the loss of interest in pleasurable activities that is a common symptom of individuals with depressive disorder may also hinder the development of these teens' peer relationships. Specifically, adolescents' with depressive disorders may not be engaging in the activities that are normative to this stage of development (e.g., going to school dances and parties) and their friendships likely suffer as a result. It follows that both cognitive behavioral therapy which targets automatic thoughts and cognitive distortions, and interpersonal therapy which focuses on interpersonal problems, have both been shown to have promising results with adolescents with depression (e.g., Lewinsohn, Clarke, & Rohde, 1994, and Mufson, et al., 1999, respectively).

Developmental Differences between Adults and Adolescents with ED

Impairments in social adjustment are common in adults with ED (e.g., Flament, et al., 2001). In the current study, across between group comparisons and correlational

analyses, the extent to which adolescents' peer group could be characterized by high levels of eating disordered thoughts and behaviors was the only aspect of peer adjustment that consistently distinguished adolescents with ED from adolescents with DD and typically developing adolescents. This may account for some of the discrepancy between the adult literature and findings from the current study. The normative nature of these thoughts and behaviors amongst the friends of adolescents with ED may normalize the experience of engaging in disordered eating thereby preserving their friendships. Adults with ED exhibit impairments in several areas of life including work and intimate romantic relationships. As individuals with ED struggle in these areas it is likely that many of their friends will successfully manage these new "adult" roles and this difference may negatively impact the peer relationships of individuals with ED. Adult friends may be less supportive and understanding of their affected friend's disordered thoughts and behaviors as they themselves may have managed to adjust, and individuals with ED may not relate to the experiences of their friends. Longitudinal research is needed to examine patterns of peer adjustment over time in individuals with ED.

Clinical Implications

A number of implications for therapists working with adolescents with ED can be drawn from this research. First, it will be important to thoroughly assess the peer adjustment of adolescents presenting with ED as some but not all of these adolescents may be experiencing significant difficulties in this area of life. In particular, adolescents presenting with co-morbid DD or AN (vs. EDNOS) might experience difficulties in their close friendships and elevated levels of loneliness and social anxiety. In addition, the peer group of adolescents with ED, particularly those with EDNOS, may be characterized

by high levels of disordered eating. Given that adolescents with ED often present as relatively well adjusted, performing well at school and involved in extracurricular activities, it may not be apparent that they struggle in interpersonal situations. Assessments for this population might benefit from the inclusion of assessments of peer adjustment as this could inform treatment decisions.

Aspects of social skills training are included in many treatments with empirical support for children and adolescents with diverse presenting problems such as attention deficit hyperactivity disorder (Antshel & Remer, 2003), social phobia (Spence, Donovan, & Brachman-Toussaint, 2000) anxiety disorders (e.g., Beidel, Turner, and Morries, 2000; Kendall, 1994), and mood disorders (e.g., Lewinsohn, Clarke, & Rohde, 1994; Lewinsohn, et al., 1996). Overall there are relatively few randomized control trials with adolescent with ED, and social skills training has not been formally studied with this group. Developing intimate connections and obtaining support from close friends, loneliness, and social anxiety were shown to be areas of vulnerability for this population (particularly those with comorbid DD and AN). Therefore, training in the skills necessary to improve these areas of functioning may be helpful. For example, skills training targeting emotional expression and asking for help/support might be beneficial for this group. Role play exercises inherent to social skills training might also serve as exposure to anxiety provoking social situations. Social skills groups are common in many therapies for children and adolescents and their potential benefit should be explored in adolescents with ED.

Having a relatively high number of friends engaging in eating disordered thoughts and behaviors differentiates individuals with ED from typically developing adolescents

and those with DD. Adolescents presenting with EDNOS may be particularly impacted by friendship networks where disordered eating is common and there is a great deal of value placed on being thin. Dissonance-based eating disorder prevention programs have people engage in verbal, written, and behavioral activities that critique the culturally sanctioned thin ideal (Stice, Shaw, Burton, & Wade, 2006). Theoretically, critiquing an ideal that one has internalized should lead to cognitive dissonance. The discomfort associated with this dissonance is then thought to motivate people to change their original beliefs in order to re-establish consistency (Festinger, 1957). Dissonance-based eating disorder prevention programs have shown promising results with at-risk adolescent girls reporting body image concerns and internalization of a thin body ideal. For instance relative to wait-list controls, at-risk adolescents participating in dissonance-based programs report greater reductions in thin-ideal internalization, body dissatisfaction, negative affect, and bulimic symptoms as much as 6 months following the interventions (Stice, Mazottie, Weibel, & Agras, 2000; Stice, Trost, & Chase, 2003). Findings have been replicated across samples by independent researchers (e.g., Becker, Smith, & Ciao, 2005; Matusek, Wendt, & Wiseman, 2004). For obvious ethical reasons it would be difficult to involve the friends of adolescents with ED in interventions; however, utilizing dissonance-based strategies as an adjunct to therapy with adolescent patients might help to protect them from the high levels of disordered eating found amongst their peers.

Limitations

There are number of limitations in this study. Most notably, participants were recruited from different treatment centers, by multiple care providers, and at different points in their treatment. Ideally each adolescent presenting at a given program would

have been asked to participate prior to beginning treatment. Using this method it would have been possible to calculate the recruitment rate, and differences between those who did and did not participate could have been explored. Given the difficulties recruiting participants for this research, it was necessary to have numerous care providers involved in recruitment at different treatment centers. Although care providers were asked to return blank letters of information each time a potential participant declined this was not always possible. As such, the peer adjustment of adolescents who chose to participate in the study may differ from those who declined participation. Adolescents who declined participation may either have had more adaptive peer adjustment and therefore have felt the research would not be helpful, or alternatively may have struggled more in their peer relationships and did not want to discuss these difficulties. Given the different points in treatment when participants were recruited, some of the adolescents in this research may have already worked with their therapist to enhance their peer relationships, or as their eating disorder symptoms remitted their peer relationships may have improved. Thus, recruitment rate is not known, comparisons between those who did and did not participate in the research were not possible, and the sample is mixed in terms of stage of treatment.

Unfortunately, monitoring recruitment is a common problem in research with child and adolescent clinical populations, and many studies are forced to recruit through multiple sites or through the media (e.g., television, magazines, and internet). Therefore, recruitment rates and comparisons between those who do and do not participate often can not be monitored. In the current study the majority of the measures used were selected because they have norms for adolescent populations. Given that the scores of participants in this study were comparable to published norms for both the typically developing

control group and the clinical groups, concern regarding the representativeness of the sample is lessened somewhat.

Although the number of participants recruited was similar to that of several recent published studies (e.g., Vrielynck, Deplus, & Philippot, 2007), this study may have had insufficient power to detect differences. This is most likely true in the comorbidity analyses and the comparisons between adolescents with AN and EDNOS. Therefore, differences between these groups in particular need to be interpreted cautiously. Similarly, the ethnic breakdown of the different groups differed. Nearly 50 percent of adolescents in the DD group were African-American whereas the majority of adolescents with ED identified themselves as Caucasian. As such, the role of ethnicity on peer adjustment for adolescents with ED could not be examined.

Future Research

Future research is needed to address some of the aforementioned limitations. It will be important to examine peer adjustment in larger more homogenous groups of individuals presenting across the spectrum of ED. Longitudinal research is needed to determine whether difficulties in peer adjustment are related to outcome. Although this research generates interesting hypotheses regarding the role of peer adjustment and recovery, given the cross-sectional nature of this research these predictions cannot be tested. It may be that difficulties in peer adjustment resolve as adolescents recover from their eating disorder, or that these difficulties are related to chronicity. In addition, further longitudinal research with at-risk populations is needed to establish difficulties in peer adjustment as causal risk factors.

Future research developing interventions to target adolescents with ED areas of vulnerability in peer adjustment is needed given that difficulties in social adjustment persist in adults with a history of ED. As discussed above, it may be that different groups of adolescents with ED would benefit from interventions targeting different aspects of peer adjustment. Research examining the benefits of addressing difficulties in interpersonal situations as an adjunct to current treatments for ED would be interesting.

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Appendix A – Parent and Adolescent Consent Forms

POTENTIAL BENEFITS TO SUBJECTS AND/OR TO SOCIETY

By taking part in the study you may benefit from knowing that you have contributed to research that might inform interventions for adolescents experiencing emotional difficulties. In addition, you will see how research in psychology is conducted.

Findings from this study are expected to benefit society by broadening our understanding of the role of peer relationships during adolescence. In addition, these findings might contribute to the development of psychological interventions for teens with eating disorders or depression.

PAYMENT FOR PARTICIPATION

You will not be paid for your participation in this research. You can however, use the time you dedicate to this project as part of your high school graduation volunteer hours if you would like. In addition your name will be entered into a draw for a $30 gift certificate to Devonshire Mall.

CONFIDENTIALITY

Confidentiality will be broken if you disclose child abuse or pose a danger to yourself or others. We will try our best to inform you before breaking confidentiality.

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission (with the possible exceptions mentioned above). Only research staff directly involved in the study will have access to the information collected. Each participant will be assigned a number so that you do not need to put your name on any of your questionnaires. Consent forms will be stored separately from questionnaires and interview data. All questionnaires will be stored in locked filing cabinets in a locked office. Data will be kept for five years following completion of the study and then it will be destroyed.

If you agree to have your interviews audio-taped your name will not be put on the tape and it will be erased after the research is completed. If you would like to listen to the audio-tape you may. You can also choose to have the tape erased. Only research staff directly involved in the study will have access to the audio-tapes. The audio-tapes will not be used for educational purposes.

Please check one of the following:

☐ **I agree to have my interviews audio-taped.**

☐ **I do not want to have my interviews audio-taped.**

PARTICIPATION AND WITHDRAWAL

You can choose whether to be in this study or not. If you volunteer to be in this study, you may withdraw at any time without consequences of any kind. You may also refuse to answer any questions you don't want to answer and still remain in the study. The investigator may withdraw you from this research if circumstances arise which warrant doing so. Participants can choose to remove their data from the study.

FEEDBACK OF THE RESULTS OF THIS STUDY TO THE SUBJECTS

Results from this study will be posted on the University of Windsor web page. To access study results go to www.uwindsor.ca/reb and click on "study results". Results will be posted approximately six months following completion of the study.

SUBSEQUENT USE OF DATA

Do you give consent for the subsequent use of the data from this study? ☐
Yes ☐ No

RIGHTS OF RESEARCH SUBJECTS

You may withdraw your consent at any time and discontinue participation without penalty. This study has been reviewed and received ethics clearance through the University of Windsor Research Ethics Board. If you have questions regarding your rights as a research subject, contact: Research Ethics Coordinator, University of Windsor, Windsor, Ontario, N9B 3P4; telephone: 519-253-3000, ext. 3916; e-mail: lbunn@uwindsor.ca.

SIGNATURE OF RESEARCH SUBJECT/LEGAL REPRESENTATIVE

I understand the information provided for the study Peer Adjustment in Adolescents as described herein. My questions have been answered to my satisfaction, and I agree to participate in this study. I have been given a copy of this form.

_____
Name of Subject

_____ _____
Signature of Subject Date

SIGNATURE OF INVESTIGATOR

These are the terms under which I will conduct research.

_____ _____
Signature of Investigator Date

LETTER OF INFORMATION FOR CONSENT TO PARTICIPATE IN RESEARCH

Title of Study: Peer Adjustment in Adolescents

Thank you for taking the time to read this information. We are writing to give you some information regarding a research study in which you might be interested in participating. The research is being conducted by Shannon Zaitsoff and Dr. Rosanne Menna from the Department of Psychology, at the University of Windsor. Results from this research will contribute to Shannon's dissertation.

Adolescents' relationships with their friends are very important. Little is known, however, about the friendships of adolescents that attend counseling. Therefore, the purpose of this study is to explore the characteristics of friendships of adolescents with eating disorders or depression and adolescents who are not in counselling. This research will help us to gain a better understanding of how adolescents' friendships are impacted by these problems and it is hoped that this will enable us to provide the best possible treatment.

If you are 16 years old or over and decide to participate in this study (or if you are under 16 years old and your parents give permission for you to participate) and are in counselling you will be asked to complete an interview and a package of questionnaires. During the interview you will be asked about your thoughts and feelings about yourself and your shape, weight, eating habits, and any worries you may be having. The questionnaires ask a number of questions about your mood, feelings, eating habits, and your experiences with your friends and at school. It will take approximately 2 to 2.5 hours to complete both the interviews and the questionnaires. If you are not in counselling you will only complete the questionnaires and it will take approximately 90 minutes to 2 hours. Participation in this research is voluntary and nobody outside of the research team will have access to your questionnaires or be informed of anything you say while participating.

If you are interested in learning more about participating in this research, please write down your name and phone number and return this sheet to the front desk at teen health centre. If you write down your name and number a research assistant will contact you.

I _____ want to learn more about participating in this research. I can
(Name)

be contacted at _____.
(Phone number)

I _____do NOT wish to be contacted to learn more about participating in
(Name or initials)
this research.

PLEASE RETURN THIS SHEET TO YOUR CAREGIVER OR AT THE FRONT DESK AT TEEN HEALTH CENTRE. Thanks again for taking the time to read this information.

Findings from this study are expected to benefit society by broadening our understanding of the role of peer relationships during adolescence. In addition, these findings might contribute to the development of psychological interventions for teens with eating disorders or depression.

PAYMENT FOR PARTICIPATION

You will not be paid for your participation in this research. You can however, use the time you dedicate to this project as part of your high school graduation volunteer hours if you would like. In addition your name will be entered into a draw for a $30 gift certificate to Devonshire Mall.

CONFIDENTIALITY

Confidentiality will be broken if you disclose child abuse or pose a danger to yourself or others. We will try our best to inform you before breaking confidentiality.

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission (with the possible exceptions mentioned above). Only research staff directly involved in the study will have access to the information collected. Each participant will be assigned a number so that you do not need to put your name on any of your questionnaires. Consent forms will be stored separately from questionnaires. All questionnaires will be stored in locked filing cabinets in a locked office. Data will be kept for five years following completion of the study and then it will be destroyed.

PARTICIPATION AND WITHDRAWAL

You can choose whether to be in this study or not. If you volunteer to be in this study, you may withdraw at any time without consequences of any kind. You may also refuse to answer any questions you don't want to answer and still remain in the study. The investigator may withdraw you from this research if circumstances arise which warrant doing so. Participants can choose to remove their data from the study.

FEEDBACK OF THE RESULTS OF THIS STUDY TO THE SUBJECTS

Results from this study will be posted on the University of Windsor web page. To access study results go to www.uwindsor.ca/reb and click on "study results". Results will be posted approximately six months following completion of the study.

SUBSEQUENT USE OF DATA

Do you give consent for the subsequent use of the data from this study? ☐
Yes ☐ No

RIGHTS OF RESEARCH SUBJECTS

You may withdraw your consent at any time and discontinue participation without penalty. This study has been reviewed and received ethics clearance through the University of Windsor Research Ethics Board. If you have questions regarding your rights as a research subject, contact: Research Ethics Coordinator, University of

Windsor, Windsor, Ontario, N9B 3P4; telephone: 519-253-3000, ext. 3916; e-mail: lbunn@uwindsor.ca.

SIGNATURE OF RESEARCH SUBJECT/LEGAL REPRESENTATIVE

I understand the information provided for the study Peer Adjustment in Adolescents as described herein. My questions have been answered to my satisfaction, and I agree to participate in this study. I have been given a copy of this form.

_____
Name of Subject

_____ _____
Signature of Subject Date

SIGNATURE OF INVESTIGATOR

These are the terms under which I will conduct research.

_____ _____
Signature of Investigator Date

Participants can decide not to answer any questions they do not want to answer and still remain in the study. Participants can also decide to stop participating at any time.

POTENTIAL BENEFITS TO SUBJECTS AND/OR TO SOCIETY

By taking part in the study your daughter may benefit from knowing that she has contributed to research that might inform interventions for adolescents experiencing emotional difficulties. In addition, she will see how research in psychology is conducted.

Findings from this study are expected to benefit society by broadening our understanding of the role of peer relationships during adolescence. In addition, these findings might contribute to the development of psychological interventions for teens with eating disorders or depression.

PAYMENT FOR PARTICIPATION

Your daughter will not be paid for her participation in this research. She can however, use the time she dedicates to this project as part of her high school graduation volunteer hours if she would like. In addition her name will be entered into a draw for a $30 gift certificate to Devonshire Mall.

CONFIDENTIALITY

Confidentiality will be broken if your daughter discloses child abuse or poses a danger to herself or others. We will try our best to inform your daughter before breaking confidentiality.

Any information that is obtained in connection with this study and that can be identified with your daughter will remain confidential and will be disclosed only with your permission (with the possible exceptions mentioned above). Only research staff directly involved in the study will have access to the information collected. Each participant will be assigned a number so that your daughter does not need to put her name on any of the questionnaires. Consent forms will be stored separately from questionnaires and interview data. All questionnaires will be stored in locked filing cabinets in a locked office. Data will be kept for five years following completion of the study and then it will be destroyed.

If you agree to have your daughter's interviews audio-taped her name will not be put on the tape and it will be erased after the research is completed. If she would like to listen to the audio-tape she may. Your daughter can also choose to have the tape erased. Only research staff directly involved in the study will have access to the audio-tapes. The audio-tapes will not be used for educational purposes.

Please check one of the following:

☐ **I agree to have my daughter's interviews audio-taped.**

☐ **I do not want to have my daughter's interviews audio-taped.**

PARTICIPATION AND WITHDRAWAL

You can choose whether or not to give permission for your daughter to participate in this study. If you give permission for your daughter to volunteer in this study, she may

withdraw at any time without consequences of any kind. Your daughter may also refuse to answer any questions she does not want to answer and still remain in the study. The investigator may withdraw your daughter from this research if circumstances arise which warrant doing so. You or daughter can choose to remove her data from the study.

FEEDBACK OF THE RESULTS OF THIS STUDY TO THE SUBJECTS

Results from this study will be posted on the University of Windsor web page. To access study results go to www.uwindsor.ca/reb and click on "study results". Results will be posted approximately six months following completion of the study.

SUBSEQUENT USE OF DATA

Do you give consent for the subsequent use of the data from this study? ☐
Yes ☐ No

RIGHTS OF RESEARCH SUBJECTS

You may withdraw your consent at any time and discontinue your daughter's participation without penalty. This study has been reviewed and received ethics clearance through the University of Windsor Research Ethics Board. If you have questions regarding your rights as a research subject, contact: Research Ethics Coordinator, University of Windsor, Windsor, Ontario, N9B 3P4; telephone: 519-253-3000, ext. 3916; e-mail: lbunn@uwindsor.ca.

SIGNATURE OF RESEARCH SUBJECT/LEGAL REPRESENTATIVE

I understand the information provided for the study Peer Adjustment in Adolescents as described herein. My questions have been answered to my satisfaction, and I agree to have my daughter participate in this study. I have been given a copy of this form.

_____
Name of Participant (daughter's name)

_____
Name of Parent/Guardian

_____ _____
Signature of Parent/Guardian Date

SIGNATURE OF INVESTIGATOR

These are the terms under which I will conduct research.

_____ _____
Signature of Investigator Date

By taking part in the study your daughter may benefit from knowing that she has contributed to research that might inform interventions for adolescents experiencing emotional difficulties. In addition, she will see how research in psychology is conducted.

Findings from this study are expected to benefit society by broadening our understanding of the role of peer relationships during adolescence. In addition, these findings might contribute to the development of psychological interventions for teens with eating disorders or depression.

PAYMENT FOR PARTICIPATION

Your daughter will not be paid for her participation in this research. She can however, use the time she dedicates to this project as part of her high school graduation volunteer hours if she would like. In addition her name will be entered into a draw for a $30 gift certificate to Devonshire Mall.

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Confidentiality will be broken if your daughter discloses child abuse or poses a danger to herself or others. We will try our best to inform your daughter before breaking confidentiality.

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SUBSEQUENT USE OF DATA

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☐ No

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I understand the information provided for the study Peer Adjustment in Adolescents as described herein. My questions have been answered to my satisfaction, and I agree to have my daughter participate in this study. I have been given a copy of this form.

_____
Name of Participant (daughter's name)

_____
Name of Parent/Guardian

_____ _____
Signature of Parent/Guardian Date

SIGNATURE OF INVESTIGATOR

These are the terms under which I will conduct research.

_____ _____
Signature of Investigator Date

Appendix B – Demographic Questionnaire

TEEN BACKGROUND INFORMATION QUESTIONNAIRE

Birthday (example, June 3, 1986) _____. Age _____ years
Month, Day, Year

What race or ethnicity do you most identify with?

___ Caucasian (White)
___ Black
___ Hispanic
___ Asian/Pacific
___ Native
___ Other

Are your parents _____?

___ Married
___ Divorced
___ Separated
___ Living together
___ Remarried
___ None of the above

Highest level of education completed?
Mother
___ Less than 7 years ___ Some junior high school (e.g., Grade 7, 8,9) ___ Some high school (e.g., Grade 10, 11, 12) ___ Graduated from high school or equivalent high school diploma ___ Some college or university ___ Graduated from college or university
Is your mother currently employed? YES □ NO □
What is/was your mother's job?
Father
___ Less than 7 years ___ Some junior high school (e.g., Grade 7, 8, 9)

___ Some high school (e.g., Grade 10, 11, 12) ___ Graduated from high school or equivalent high school diploma ___ Some college or university ___ Graduated from college or university
Is your father currently employed? YES □ NO □
What is/was your father's job?

Do you have a best friend? YES □ NO □ If yes, initials _____

How often do you compare your body to that of others?" (circle one)

1	2	3	4	5
Never	Rarely	Sometimes	A lot	Always

Have your friends ever teased you about being too fat? YES □ NO □

Have other kids at school ever teased you about being too fat? YES □ NO □

Has anyone in your family ever teased you about being too fat? YES □ NO □

How much do you believe that being thin will make your peers like you more or make you more popular?

1	2	3
Not at all	A little	A lot

It is important for me to be popular with kids of my age.

1	2	3
Not at all true	A little true	A lot true

****

Have you started having your period? YES □ NO □

How old were you when you had your first period? _____

When did you have your last period? _____
Month Year

Do you use any form of birth control? YES □ NO □
If yes, what is the name or kind of birth control you use?
_____

Have you ever had sexual intercourse? YES □ NO □

Appendix C – History of Mental Health Problems Screening

****

Your height: _____ Your weight: _____

Highest past weight: _____

Lowest weight as a teenager (at your current height): _____

How much would you like to weigh? _____

Have you received treatment for an eating disorder? YES □ NO □

Have you ever been in counseling or therapy? YES □ NO □

Have you ever experienced or sought treatment for any of the following:

YES □ NO □ Severe illness of hospitalization

YES □ NO □ Seizures, convulsions, or fits

YES □ NO □ Fainting or passing out

YES □ NO □ Problems with eating or weight

YES □ NO □ Problems with sleeping

YES □ NO □ Problems with alcohol or drugs

YES □ NO □ Anxiety, nervousness, or worrying

YES □ NO □ Depression, moodiness, irritability

YES □ NO □ Problems with breaking rules or laws

YES □ NO □ Nervousness or shyness around people

Appendix D – Eating Disorders Inventory 2 (Drive for Thinness, Bulimia, and Body Dissatisfaction Subscales)

Eating Disorders Inventory (EDI-2)

This is a scale which measures a variety of attitudes, feelings and behaviors. Some of the items relate to food and eating. Others ask you about your feelings about yourself. THERE ARE NO RIGHT OR WRONG ANSWERS SO TRY VERY HARD TO BE COMPLETELY HONEST IN YOUR ANSWERS. Read each question and circle the number of the answer that applies best to you. Please answer each question very carefully. Thank you.

		Always	Usually	Often	Sometimes	Rarely	Never
1	I eat sweets and carbohydrates without feeling nervous	1	2	3	4	5	6
2	I think that my stomach is too big	1	2	3	4	5	6
3	I eat when I am upset	1	2	3	4	5	6
4	I stuff myself with food	1	2	3	4	5	6
5	I think about dieting	1	2	3	4	5	6
6	I think that my thighs are too large	1	2	3	4	5	6
7	I feel extremely guilty after overeating	1	2	3	4	5	6
8	I think that my stomach is just about the right size	1	2	3	4	5	6
9	I am terrified of gaining weight	1	2	3	4	5	6
10	I feel satisfied with the shape of my body	1	2	3	4	5	6
11	I exaggerate or magnify the importance of weight	1	2	3	4	5	6
12	I have gone on eating binges where I felt that I could not stop.	1	2	3	4	5	6
13	I like the shape of my buttocks	1	2	3	4	5	6
14	I am preoccupied with the desire to be thinner	1	2	3	4	5	6
15	I think about bingeing (overeating)	1	2	3	4	5	6
16	I think my hips are too large	1	2	3	4	5	6
17	I eat moderately in front of others and stuff myself when they're gone	1	2	3	4	5	6
18	If I gain a pound, I worry that I will keep gaining	1	2	3	4	5	6
19	I have the thought of trying to vomit in order to lose weight	1	2	3	4	5	6
20	I think that my thighs are just the right size	1	2	3	4	5	6
21	I think my buttocks are too large	1	2	3	4	5	6
22	I eat or drink in secrecy	1	2	3	4	5	6
23	I think that my hips are just the right size	1	2	3	4	5	6

Appendix E – Peer Crowd Questionnaire

DIRECTIONS: Circle the crowd or group that you most identify with.

NAME (circle one):	DESCRIPTION:
JOCKS	Athletic, on sports teams
BRAINS/NERDS	Enjoys school, does well in school
POPULARS	High-status adolescents, "image" oriented
ALTERNATIVES/ NONCONFORMISTS	Do not conform to social norms
AVERAGE	Just average
BURNOUTS	Skips school, gets in trouble
NONE/LONER/ NO CROWD AFFILIATION	Spends a lot of time alone, do not fit in, do not affiliate with a crowd
OTHER	Please describe_____

How long have you been a member of this crowd? (circle one):

Less than a year | Since the beginning of high school | Since grade or elementary school

Appendix F – Self-Perception Profile for Adolescents Social Acceptance Scale

Really True For Me	**Sort of True for Me**				**Sort of True for Me**	**Really True For Me**
		Sample Sentene				
☐	☐	Some teenagers like to go to the moives in their spare time	**BUT**	Other teenagers would rather go to sports events	☐	☐
☐	☐	Some teenagers find it hard to make friends	**BUT**	For other teenagers it's pretty easy	☐	☐
☐	☐	Some teengares have a lot of friends	**BUT**	Other teenagers don't have very many friends	☐	☐
☐	☐	Some teenagers are very hard to like	**BUT**	Other teenagers are really easy to like	☐	☐
☐	☐	Some teenagers are popular with others their age	**BUT**	Other teenagers are not very popular	☐	☐
☐	☐	Some teenagers feel that they are socially accepted	**BUT**	Other teenagers wished that more people their age accepted them	☐	☐

Appendix G – Revised Peer Experiences Questionnaire

These questions ask about some things that often happen between teens. Please rate how often you have done these things to others and how often these things have happened to you in the past year.

How often have you done this to another teen?

1. I left another teen out of an activity or conversation that they really wanted to be included in.

1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

2. I chased a teen like I was really trying to hurt him or her

1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

3. I helped another teen when they were having a problem

1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

4. I would not sit near another teen who wanted to be with me at lunch or in class

1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

5. I tried to damage another teens' social reputation by spreading rumors about them

1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

How often has this happened to you?

Some teens left me out of an activity or that I really wanted to be included in.

1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

A teen chased me like he or she was really trying to hurt me

1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

Another teen helped me when I was having a problem

1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

A teen I wanted to be with would not sit near me at lunch or in class

1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

A teen tried to damage my social reputation by spreading rumors about me

1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

6. I was nice and friendly to a teen when they needed help

1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

Another teen was nice and friendly to me when I needed help

1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

7. I did not invite a teen to a party or other social event even though I knew the teen wanted to go.

1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

A teen did not invite me to a party or social event even though they knew that I wanted to go.

1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

8. I left another teen out of what I was doing

1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

A teen left me out of what they were doing

1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

9. I told another teen that I would not be friends with them anymore to get back at them

1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

To get back at me, another teen told me that s/he would not be friends with me anymore

1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

10. I stuck-up for a teen who was being picked on or excluded.

1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

Another teen stuck-up for me when I was being picked on or excluded

1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

11. I gossiped about another teen so others would not like him/her

1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

Another teen gossiped about me so others would not like me

1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

12. I threatened to hurt or beat up another teen

1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

A teen threatened to hurt or beat me up

1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

13. I gave another teen the silent treatment (did not talk to the teen on purpose)

1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

A teen gave me the silent treatment (did not talk to me on purpose)

1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

14. I said mean things about a teen so that people would that people would think s/he was a loser

1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

Another teen said mean things about me so people would think I was a loser

1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

15. I helped a teen join into a group or conversation

1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

A teen helped me join into a group or conversation

1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

16. I hit, kicked, or pushed another teen in a mean way.

1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

A teen hit, kicked, or pushed me in a mean way

1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

17. I teased another teen in a mean way, by saying rude things or calling him or her bad names.

1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

A teen teased me in a mean way, by saying Rude things or calling me bad names.

1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

18. I spent time with a teen when they had no one else to hang out with.

1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

A teen spent time with me when I had no one else to hang out with

1. Never
2. Once or twice
3. A few times
4. About once a week
5. A few times a week

Appendix H – Network of Relationships Inventory Revised

Everyone has a number of people who are important in his or her life. These questions ask about your relationships with each of the following people: a same-sex friend, and an opposite-sex friend.

Now we would like you to choose a boy/girl friend whom you are dating or dated. You may choose someone you are seeing now, or someone you went out with earlier in high school. If you choose a past boy/girl friend, please answer the questions as you would have when you were in the relationship.

Boy/Girl Friend's First Name _____

How long is/was the relationship? ____ years _____ months *(please fill in numbers)*

Are you seeing this person now? **A.** Yes **B.** No

If you have never dated anyone, please choose the most important **other-sex friend** you have had in high school. You may select someone who is your most important other-sex friend now, or who was your most important other-sex friend earlier in high school. **Do not choose a sibling, relative, or boy/girl friend—even if she or he is or was your best friend.** If you select a person with whom you are no longer friends, just answer the questions as you would have when you were in the relationship.

Other-Sex Friend's First Name _____

How long is/was the friendship? ____ years _____ months *(please fill in numbers)*

Are you close friends now?

A. Yes **B.** Friends, but not as close as before **C.** No

Please choose the most important **same-sex friend** you have had in high school. You may select someone who is your most important same-sex friend now, or who was your most important same-sex friend earlier in high school. **Do not choose a sibling.** If you select a person with whom you are no longer friends, please answer the questions as you would have when you were in the relationship.

Same-Sex Friend's First Name _____

How long is/was the friendship? ____ years _____ months *(please fill in numbers)*

Are you close friends now?

A. Yes **B.** Friends, but not as close as before **C.** No

****

Now we would like you to answer the following questions about the people you have selected above. Sometimes the answers for different people may be the same but sometimes they may be different.

	Little or None	Some-what	Very Much	Extre-mely Much	The Most
1. How often do you turn to this person for support with personal problems?	1	2	3	4	5
2. How often do you depend on this person for help, advice, or sympathy?	1	2	3	4	5
3. When you are feeling down or upset, how often do you depend on this person to cheer things up?	1	2	3	4	5
4. How often does this person point out your faults or put you down?	1	2	3	4	5
5. How often does this person criticize you?	1	2	3	4	5
6. How often does this person say mean or harsh things to you?	1	2	3	4	5
7. How often does this person get his/her way when you two do not agree about what to do?	1	2	3	4	5
8. How often does this person end up being the one who makes the decisions for both of you?	1	2	3	4	5
9. How much free time do you spend with this person?	1	2	3	4	5
10. How much do you and this person get upset with or mad at each other?	1	2	3	4	5
11. How much does this person teach you how to do things that you don't know?	1	2	3	4	5
12. How much do you and this person get on each other's nerves?	1	2	3	4	5
13. How much do you talk about everything with this person?	1	2	3	4	5
14. How much do you help this person with things she/he can't do by her/himself?	1	2	3	4	5

	Little or None	Some-what	Very Much	Extre-mely Much	The Most
15. How much does this person like or love you?	1	2	3	4	5
16. How much does this person treat you like you're admired and respected?	1	2	3	4	5
17. Who tells the other person what to do more often, you or this person?	1	2	3	4	5
18. How sure are you that this relationship will last no matter what?	1	2	3	4	5
19. How much do you play around and have fun with this person?	1	2	3	4	5
20. How much do you and this person disagree and quarrel?	1	2	3	4	5
21. How much does this person help you figure out or fix things?	1	2	3	4	5
22. How much do you and this person get annoyed with each other's behavior?	1	2	3	4	5
23. How much do you share your secrets and private feelings with this person?	1	2	3	4	5
24. How much do you protect and look out for this person?	1	2	3	4	5
25. How much does this person really care about you?	1	2	3	4	5
26. How much does this person treat you like you're good at many things?	1	2	3	4	5
27. Between you and this person, who tends to be the BOSS in this relationship?	1	2	3	4	5
28. How sure are you that your relationship will last in spite of fights?	1	2	3	4	5
29. How often do you go places and do enjoyable things with this person?	1	2	3	4	5
30. How much do you and this person argue with each other?	1	2	3	4	5
31. How often does this person help you when you need to get something done?	1	2	3	4	5

	Little or None	Some-what	Very Much	Extre-mely Much	The Most
32. How much do you and this person hassle or nag one another?	1	2	3	4	5
33. How much do you talk to this person about things that you don't want others to know?	1	2	3	4	5
34. How much do you take care of this person?	1	2	3	4	5
35. How much does this person have a strong feeling of affection (loving or liking) toward you?	1	2	3	4	5
36. How much does this person like or approve of the things you do?	1	2	3	4	5
37. In your relationship with this person, who tends to take charge and decide what should be done?	1	2	3	4	5
38. How sure are you that your relationship will continue in the years to come?	1	2	3	4	5
39. How satisfied are you with your relationship with this person?	1	2	3	4	5
40. How good is your relationship with this person?	1	2	3	4	5
41. How happy are you with the way things are between you and this person?	1	2	3	4	5
42. How often does this person get you to do things his/her way?	1	2	3	4	5

Appendix I – Number of Friends and Behavioral Characteristics of Friendship Network

1. List the initials and gender/sex of your closest friends (do not write down their name). You can put fake or made up initials instead of your friend's real initials if you are concerned that they could be identified from their real initials but please be sure that you only list each friend one time.
2. For each friend, put a check mark under each behavior or thought that you think they do or have.

Friends Initials	Gender G=girl B=boy	Get good grades	Have smoked Cigarettes	Complains that they are fat	Is on a diet	Is sad/ depressed a lot of the time	Talks about dieting or losing weight	Have vomited to get rid of food they've eaten	Have had sex	Exercises to lose weight	Thinks it is important to be thin	Have gotten drunk	Wants to lose weight	Has ever had an eating disorder	Have used marijuana	Encourages you to diet or lose weight

Appendix J - Revised UCLA Loneliness Scale Short Form

DIRECTIONS: Indicate how often you feel the way described in each of the following statements. Circe one number for each.

	Statement	Never	Rarely	Some-Times	Often
1	I feel in tune with the people around me	1	2	3	4
2	I lack companionship	1	2	3	4
3	I do not feel alone	1	2	3	4
4	I have a lot in common with the people around me	1	2	3	4
5	I am no longer close to anyone	1	2	3	4
6	My interests and ideas are not shared by those around me	1	2	3	4
7	I feel left out	1	2	3	4
8	There are people who really understand me	1	2	3	4
9	People are around me but not with me	1	2	3	4
10	There are people I can turn to	1	2	3	4

Appendix K - Social Anxiety Scale for Adolescents

Show HOW MUCH something is true of you, by using the following scale:
1 = Not at all characteristic of me
2 = Slightly characteristic of me
3 = Moderately characteristic of me
4 = Very characteristic of me
5 = Extremely characteristic of me

1.	I'm afraid that others will not like me	1	2	3	4	5
2.	I worry about what others think of me	1	2	3	4	5
3.	I worry what others say about me	1	2	3	4	5
4.	I worry that others don't like me	1	2	3	4	5
5.	I worry about being teased	1	2	3	4	5
6.	I feel that others are making fun of me	1	2	3	4	5
7.	I feel that peers talk about me behind my back	1	2	3	4	5
8.	If I get into an argument, I worry that the other person will not like me	1	2	3	4	5
9.	I get nervous when I talk to peers I don't know very well	1	2	3	4	5
10.	I feel shy around people I don't know	1	2	3	4	5
11.	I get nervous when I meet new people	1	2	3	4	5
12.	I feel nervous when I'm around certain people	1	2	3	4	5
13.	I worry about doing something new in front of others	1	2	3	4	5
14.	I only talk to people I know really well	1	2	3	4	5
15.	It's hard for me to ask others to do things with me	1	2	3	4	5
16.	I'm afraid to invite others to do things with me because they might say no	1	2	3	4	5
17.	I am quiet when I'm with a group of people	1	2	3	4	5
18.	I feel shy even with peers I know very well	1	2	3	4	5

Vita Auctoris

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