The Social Problem-solving Approach of Adolescent Females Diagnosed with an Eating Disorder: Toward a Greater Understanding of Control

Roger K. McFillin
Philadelphia College of Osteopathic Medicine, rogermcf@pcom.edu

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THE SOCIAL PROBLEM-SOLVING APPROACH OF ADOLESCENT FEMALES DIAGNOSED WITH AN EATING DISORDER: TOWARD A GREATER UNDERSTANDING OF CONTROL

By Roger K. McFillin

Submitted in Partial Fulfillment of the Requirements for the Degree of Doctor of Psychology

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DEPARTMENT OF PSYCHOLOGY

Dissertation Approval

This is to certify that the thesis presented to us by Roger McFillin on the 19th day of May, 2009, in partial fulfillment of the requirements for the degree of Doctor of Psychology, has been examined and is acceptable in both scholarship and literary quality.

Committee Members' Signatures:

Stacey Cahn, Ph.D., Chairperson

Virginia Salzer, Ph.D.

Martha Levine, M.D.

Robert A. DiTomasso, Ph.D., ABPP, Chair, Department of Psychology
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Abstract

The current study examined social information processing variables, social problem solving skills, and interpersonal assertiveness in adolescent females diagnosed with an eating disorder. A total of 114 adolescent females between the ages of 14-17 participated in the study. Fifty girls currently in treatment for a diagnosed eating disorder were compared to 64 healthy nonclinical controls. When presented with vignettes depicting ambiguous social dilemmas, the eating disorder group demonstrated a more hostile attributional bias, experienced a significantly greater intensity of negative emotions, and relied upon more avoidant coping strategies when compared to the nonclinical control group. Specifically, the eating disorder group reported significantly more intrapunitive avoidant strategies that represent a self-destructive means of coping with distressing events. In addition, the eating disorder group had significantly less confidence in their ability to effectively handle social problems, and felt more overwhelmed emotionally in response to social problems. Finally, the eating disorder group reported significantly less interpersonal assertiveness, that likely impacts feelings of helplessness and loss of control in relationships. The results identified social problem-solving skill deficits that may contribute to or maintain core eating disorder pathology.
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Chapter One: Statement of the Problem

Practitioners generally accept that a myriad of biological, psychological, and sociological factors influence the development of eating disorders (Polivy & Herman, 2002). However, the pervasive view in the literature suggests eating disorders represent a pathologically extreme means of gaining control in a world perceived as out of control for the patient (Surgenor, Horn, & Hudson, 2003). Accepted theories regarding the development and maintenance of eating disorders suggest that the problem with eating is secondary and represents a pathological coping mechanism associated with more fundamental psychological difficulties (Dalgleish, Tchanturia, Serpell, Hems, de Silva et al., 2001; Leung, Waller & Thomas, 1999; Vitousek, 1996). Unfortunately, empirically supported treatments for this vulnerable population remains sparse. More importantly, due to methodological restraints, research on adolescent females diagnosed with an eating disorder is underrepresented in the literature. In order to improve treatment outcomes, it is imperative to identify underlying cognitive processes and specific skill deficits that may influence the development and maintenance of disordered eating. The goal of this study is to determine if adolescent girls with eating disorders differ significantly from healthy counterparts in terms of social information processing biases, social problem-solving skills, and assertiveness skills. These are specific cognitive processes and behavioral skills that are theorized to play a significant role in perceived control and coping. To the investigator’s knowledge, this is the first attempt at understanding the problem-solving approach of adolescent girls diagnosed with an eating disorder.
Eating Disorders in Adolescence: A Call for Research

Adolescence by nature is a time of distinct transformation and development. The unique characteristics and challenges of this developmental period often fuel debate regarding the efficacy of treatment protocols developed from research on adult populations. Researchers have voiced concern that existing empirically supported treatment interventions do not sufficiently take into account specific adolescent developmental variables (e.g., Gowers & Bryant-Waugh, 2004; Holmbeck & Updegrove, 1995; Holmbeck, Colder, Shapera, Westhoven, Kenealy et al., 2000; Weisz & Hawley, 2002). This disparity is conspicuously evident within the eating disorder literature (Keel & Haedt, 2008), especially considering the developmental trajectory of the symptoms. With this in mind, it is imperative for clinicians and researchers to identify specific developmental variables that distinguish differences among clinical populations in an effort to advance more effective treatment protocols for our adolescents.

In fact, the Society for Adolescent Medicine has published a position paper on eating disorders in adolescents recommending that psychological interventions should include the mastery of the developmental tasks of adolescence (Kreipe, Golden, Katzman, Fisher, Reese et al., 1995). Tailoring interventions to address the psychosocial issues central to this age group is imperative for successful treatment. Wilson and Sysko (2006) acknowledged the absence of any evidence-based treatment for adolescent bulimia nervosa and cited developmental factors to be vitally important in the onset of the disorder (Commission on Adolescent Eating Disorders, 2005).
Other researchers have called for further examination of social cognition in anorexia nervosa patients, noting that understanding the behavioral and cognitive features that characterize interpersonal processes is a necessary prerequisite for treatment innovation (Zucker et al., 2007). Given the interpersonal deficits observed in this population (Gillberg, Rastam, & Gillberg, 1995), developing a basic understanding of social cognitive processes is imperative for developing effective interventions. Furthermore, given the importance of social competence in adolescence, new treatment strategies designed to improve social skills may improve treatment motivation and indirectly assist in recovery through the development of healthy coping skills that replace the function of disordered eating.

The current study attempts to identify potential differences in social cognitive processing that may exist between clinical and non clinical adolescent populations. Furthermore, this study examines skills in problem-solving, an important coping skill for perceived distress in adolescents (Frauenknecht, Black, & Coster, 1996). The goal is to better understand possible maintaining psychological factors of eating disorders specific to the developmental period of adolescence.

**Background and Significance**

**Social Information Processing**

Cognitive psychologists have long been interested in how the interpretation of situations has influenced related emotions and behaviors. One widely studied theory, based on the research of overtly aggressive boys, is Crick and Dodge's (1994) reformulated social information processing model (SIP). SIP provides empirical
support and a theoretical framework for understanding how the cognitive response to social cues impacts the problem solving and solution implementation process. This model has provided significant advances in the understanding of children’s social adjustment, and the possible application across clinical populations is immense. This study is the first attempt to identify differences in information processing that may exist in adolescent girls diagnosed with an eating disorder. The goal is to identify unique cognitive, affective, and behavioral differences that may exist in response to ambiguous social situations. Understanding potential distortions in perception would accordingly offer insight into the limitation of available coping responses that have also been identified in boys with conduct disorder (Crick & Dodge, 1996; Dodge, 1980; Dodge, Price, Bachorowski, & Newman, 1990; Quiggle, Garber, Panak, & Dodge, 1992).

Social Problem Solving

The term social problem solving refers to problem solving that influences one’s adaptive functioning within a social context. This is a broad concept that includes the process of solving interpersonal problems (e.g., family conflicts, friendships, marital disputes), impersonal problems (e.g., finances), personal or intrapersonal problems (e.g., emotional, behavioral, cognitive, or health problems), as well as broader societal problems (D’Zurilla, Nezu, & Maydeu-Olivares, 2004). Thus, social problem solving includes the complex cognitive-affective-behavioral process that individuals use to cope with problematic situations that arise in everyday living. The model was originally introduced by D’Zurilla and Goldfried (1971) and identifies
three major concepts: the problem, the problem-solving approach, and the solution. These skills are highly associated with social competence and adaptation, stress, and various forms of maladjustment and psychopathology (D'Zurilla & Nezu, 1990). It is theorized that skill deficits in problem solving may contribute to perceived control loss or helplessness.

**Assertiveness**

Assertiveness is a concept that has been discussed in the eating disorder literature as a key component of the personality makeup in anorexic and bulimic patients. Assertiveness is defined as a personality construct associated with the ability to clearly state one's wishes and stand up for oneself in order to get what one wants (Chamberline & Schene, 1997). This is a key component of independence and self-directedness, as it relates to ultimately perceiving greater control to cope with external events by having a greater voice through effective communication and problem solving.

Assertiveness can be viewed in relation to a style of interaction that focuses on pleasing others and conforming to social situations (Williams, Taylor, & Ricciardelli, 2000). Individuals who lack assertiveness may appear to lack confidence and rely on the positive feedback of others to develop a positive self-image. This generates an enormous amount of pressure to be accepted and liked by others, which may in turn lead to the use of more passive strategies in relationships. Passive strategies may take on various forms when interacting with others (Paterson, 2000), such as adopting a submissive posture with people, avoiding eye contact, appearing
nervous, and avoiding people. These passive strategies may be a response to the fear of a negative evaluation from others and desire to avoid any situation that places the individual at risk for criticism. Alternatively, the individual may appear quite active, but it is representative of working hard to please others, striving to gain acceptance, and generally molding themselves to how others want them to be. This style of interaction may be in response to core beliefs that “I am not as important as others,” or “I am not as good as others.” A more passive style is likely to lead to beliefs that “others are in charge of my fate” and feeling out of control or helpless. The research on assertiveness and eating disorders has been limited to the adult population, utilizing measures specifically designed for adults (e.g., Hooleran, Pascale, & Fraley, 1988; Rogers & Petrie, 2001; Surgenor et al., 2003). The current study identified hypothesized deficits in assertiveness in young girls diagnosed with an eating disorder that would contribute to feelings of powerlessness. Assertiveness is a fundamental component in the ability to implement solutions within the problem-solving process. Those who lack assertiveness skills may be more likely to choose avoidant coping strategies that fail to confirm or disconfirm their original attribution about events.

Through the understanding of the problem-solving approach, the current research provides evidence on the interpersonal coping skills of adolescent girls diagnosed with an eating disorder. While the concept of perceived control is widely accepted as integral to disordered eating (Surgenor et al., 2003), whether skill deficits contribute to this perceived loss of control in adolescent disordered eating remains unknown. To the investigator’s knowledge, this study is the first attempt to offer
insight into specific problem-solving skills theorized to play an important role in perceived control.

Purpose of the Study

The purpose of this study is to better understand the cognitive and behavioral features that characterize interpersonal processes in adolescent girls diagnosed with an eating disorder. The literature suggests that an eating disorder represents a pathologically extreme measure of gaining control in a world perceived as out of control (Surgenor et al., 2003; Waller & Thomas, 1999; Vitousek, 1996). If that premise is accurate, a continued goal for researchers is to identify unique skills deficits that may contribute to loss of control and to help clinicians better understand the function of disordered eating. This research study attempted to identify and explore a relatively unexplored domain in understanding the interpersonal realities of adolescent girls diagnosed with an eating disorder. The goal was to better understand the social problem-solving approach of adolescent girls with an eating disorder by examining their social information processing of ambiguous social dilemmas, social problem-solving skills, and interpersonal assertiveness skills as compared to those of a non clinical control group.
Chapter Two: Literature Review

Established Psychological Interventions for Bulimia Nervosa (BN)

To this author's knowledge, only one randomly controlled treatment trial has been conducted in adolescents with BN (Keel & Haedt, 2008). In the absence of established research on adolescents with eating disorders, current treatment trends draw conclusions from adult findings. In adult samples, cognitive-behavioral therapy (CBT) has yielded the strongest results and is considered a well-established intervention for the treatment of BN (Keel & Haedt, 2008). Cognitive-behavioral therapy for adults has proven to be superior to wait-list control groups. In controlled treatment outcome studies, 30% to 50% of patients were abstinent from binge eating and purging at the completion of treatment, and a decrease in binging and purging was identified as typically 80% or greater (Wilson & Fairburn, 2002). In studies comparing CBT with antidepressant medication, CBT has consistently demonstrated greater efficacy (Keel & Haedt, 2008; Whittal, Agras, & Gould, 1999). CBT has also shown to be equal or superior to all comparable treatments (Wilson & Fairburn, 2002).

The National Institute for Clinical Excellence guidelines has identified manual-based CBT as the treatment of choice for adult BN (Keel & Haedt, 2008). Several of the adult randomized controlled trials included a significant portion of participants between the ages of 18 and 21. Based on these results, CBT represents a well-established treatment for BN for late adolescent/young adult females (Keel &
Haedt, 2008). CBT is generally viewed as a coping model that is very much problem focused. Outcomes from this study can be applicable to the cognitive-behavioral model of treatment.

Interpersonal psychotherapy (IPT) is a form of therapy that has been utilized to assist patients in addressing interpersonal difficulties that may be associated with the onset or maintenance of the eating disorder (Gowers & Bryant-Waugh, 2004). This form of therapy has been efficacious in the long-term reduction of symptoms for BN (Agras, Walsh, Fairburn, Wilson, & Kraemer, 2000). Although CBT produces more rapid reductions in symptoms associated with BN, patients have found IPT to be more appropriate for their difficulties and were more optimistic about success in therapy (Agras et al., 2000). It is important to note that this form of therapy considers the characteristic eating psychopathology secondary and attempts to focus on specific interpersonal skill deficits that may contribute to disordered eating. Both CBT and IPT have common goals of improving skill deficits that may be associated with the onset or maintenance of the eating disorder. Outcomes from this study may be useful to improving treatment from the perspective of Interpersonal psychotherapy.

Two recent studies have examined a modification of the Maudsley model of family therapy for the treatment of BN and Eating Disorder Not Otherwise Specified (EDNOS) in adolescents (Ie Grange, Crosby, Rathouz, & Leventhan, 2007; Schmidt, Lee, Beechem, Perkins, Treasure et al., 2007). Ie Grange et al. (2007) compared family therapy to supportive psychotherapy for younger adolescents ($M = 16$ years, range = 12 to 19 years). Results established the superiority of family therapy compared to supportive psychotherapy in reducing symptoms at treatment end and at
6-month follow-up. Due to the fact that interview assessments of treatment responses were not conducted blind to treatment condition, this study cannot be classified as a Type I study (Keel & Haedt, 2008). Thus, results indicate that family therapy may be efficacious for treating BN and EDNOS in younger adolescents (Keel & Haedt, 2008).

A randomized controlled trial was utilized to compare family therapy and CBT guided self-care (self-help) for older adolescents (Mean age = 17.5 years, range = 13 to 20 years) with BN and EDNOS (Schmidt et al., 2007). In this study, there were no significant differences between treatments for rates of abstinence from binge-purge behaviors at treatment end or 12-month follow-up. However, there was a significantly higher rate of abstinence from binge eating at treatment end for the CBT group compared to family therapy. However, this was no longer evident at 12-month follow-up.

Established Psychological Interventions for Anorexia Nervosa (AN)

In a complete review of the literature, it has been concluded that family therapy represents a well-established intervention for the treatment of AN in adolescents (Keel & Haedt, 2008). Despite its common clinical use, little systematic research has been conducted on its efficacy with eating disorders, and results should be interpreted with caution as the following studies contain severe methodological flaws. Russell et al. (1987) compared the efficacy of family therapy and nonspecific individual therapy in adolescent patients with AN. Good outcome was defined as maintaining weight within 15% of that expected and return to regular menses. Among
adolescent patients in family therapy, 60% achieved a good outcome at 1-year follow up, and 90% had maintained weight within 15% of expectation. By contrast, among those adolescents receiving nonspecific individual therapy, only 9% achieved good outcome, and 18% had maintained weight within 15% of that expected. The dropout rate was also significantly lower for family therapy (10%) than individual therapy (64%). However, severe limitations include non manualized treatments and a small sample size.

A behavioral family systems therapy was compared to ego-oriented individual therapy in adolescent patients with AN (Robin et al., 1999). The family therapy group produced significantly greater weight gain compared to the ego-oriented individual therapy post treatment. Keel & Haedt (2008) identified several limitations within this study that challenge its efficacy. These include the fact that 58% of patients randomized to the family therapy group received inpatient treatment, compared to only 28% of the individual therapy group. In addition, patients in the family therapy group were significantly older than the patients in individual therapy (14.9 vs. 13.4 years). Further limitations include a small sample size, large number of therapists, and a long recruitment period. Due to these two separate studies displaying superior results to alternative treatments, family therapy represents a well-established intervention according to the APA Task Force Criteria (1995) (Keel & Haedt, 2008). However, the significant limitations of both studies establish the need for further examination.

Adolescent family therapy was also studied on an outpatient basis without first hospitalizing the patients (Eisler, Dare, Hodes, Russell, Dodge et al., 2000; le
Grange, Eisler, Dare, & Russell, 1992). These studies sought to enhance family therapy by comparing different forms. Grange et al. (1992) compared conjoint family therapy and separated family therapy. This study found no significant differences, as patients within both treatments demonstrated significant improvements in weight and scores on the Eating Attitudes Test (EAT) (Garner, Olmstead, Bohr, & Garfinkel, 1982). In contrast, Eisler et al. (2000) discovered that separated family therapy was superior for patients with high levels of maternal criticism.

In a study of older adolescent patients with AN (ages 17 to 21), individual cognitive therapy was compared to dietary counseling (Serfaty, Turkington, Heap, Ledsham, & Jolley, 1999). After 3 months of treatment 100% ($n = 10$) of patients assigned to dietary counseling had dropped out compared to only 8% ($n = 2$) receiving cognitive therapy. Of the patients receiving cognitive therapy, 56% had achieved remission. Nondirective psychoanalytic psychotherapy was compared to cognitive orientation therapy in the treatment of AN with a majority of adolescent subjects (Bachar, Latzer, Kreitler, & Berry, 1999). Among patients in the cognitive orientation therapy group, 67% had dropped out of treatment, compared to only 28% in the psychoanalytic group. The psychoanalytic group achieved 83% remission, compared to no patients in the cognitive orientation cohort. Due to the small sample size, only two participants completed the cognitive orientation therapy, and results should be interpreted with caution.
Biological, Psychological, and Social Development in Disordered Eating

The following sections outline the specific developmental variables that are associated with disordered eating and reflect the importance of designing treatment protocols that are specific to the developmental needs of adolescent females. The concept of *dynamic interactionism* (Susman, Dorn, & Schiefelbein, 2003) best describes the influence of physical, cognitive, emotional, and social factors in the development of a healthy self-concept and the personal well-being of an adolescent female. In fact, a growing body of research indicates that early adolescent self-esteem is influenced by an array of individual and contextual factors that can either promote or hinder overall development (DuBois & Hirsch, 2000). Therefore, from a prevention and intervention perspective, it is best to understand the development and maintenance of disordered eating from a perspective that addresses the multitude of interrelating variables unique to adolescence.

Weight, Body Fat, and the Onset of Puberty

The onset of puberty in adolescent girls results in dramatic changes in body shape and composition, adding an average of 24 pounds of body fat (Warren, 1983). This *fat spurt* has lasting social and emotional consequences. In the United States and western culture, the thin body image is presented in the media as the "ideal" female representation and is a source of social comparison and body dissatisfaction (Tiggemann & Slater, 2004). Girls who perceive themselves to be underweight are more satisfied with their bodies than those who are of average weight (Tobin-Richards, Boxer, & Peterson, 1983). The onset of puberty and the associated physical
changes often result in social physique anxiety (Kowalski, Mack, Crocker, Niefer, & Fleming, 2006). How one copes with the resulting anxiety may have a major influence on the development of disordered eating. Girls who mature earlier are at greater risk of reporting body dissatisfaction and eating problems (Graber, Brooks-Gunn, & Paikoff, 1994). This may be due to the fact that they are now comparing themselves to peers who have not gone through the pubertal fat spurt and are more representative of the cultural ideal body image. Evidence suggests early maturation and body dissatisfaction are linked due to teasing from peers and parents at the beginning of breast development (Silbereisen & Kracke, 1997). The younger the age at which a girl matures; the less likely she is to have the personal skills to cope.

_Socio Cultural Influences_

Studies have shown that girls as young as 6 years old have identified a strong desire to be thin (Ambrosi-Randic, 2000; Dohnt & Tiggemann, 2005). Socio cultural models have suggested that the thin ideal is communicated through numerous media outlets including television, movies, literature, and magazines. The desire to be thin is then reinforced through interactions with peers and families (Dohnt & Tiggemann, 2006; Paxton, Schutz, Wertheim, & Muir, 1999). Objectification theory (Fredrickson & Roberts, 1997) states that a woman's experience and gender socialization include a history of sexual objectification in which their individual self-worth is reduced to their bodies, body parts, or body functions. This occurs through social encounters and media representations of women. When this becomes internalized and reinforced, women are likely to over evaluate the importance of shape and weight. Their self-
Concept becomes highly determined by attention from males, specifically sexual attention. This has been theorized to be a major contributor to body dissatisfaction, body shame, social comparison, anxiety, depression, and eating disorder symptomatology (Moradi, Dirks, & Matteson, 2005).

Peer and Familial Influence

Socialization theory (Kandel, 1980) states that both social reinforcement and modeling play an important role in promoting behavior. Social reinforcement refers to the process by which people exhibit behaviors and values approved by significant others. Modeling is the process by which individuals imitate the behaviors of others (Bandura, 1969). From a socio cultural perspective on the development of disordered eating, social reinforcement would be considered the comments or actions witnessed by friends and family that perpetuate the thin ideal body image for women (Stice, 1998).

Stice (1998) discovered that family and peer modeling behavior was associated with concurrent bulimic symptoms and predicted the onset of binge eating and purging. Research has shown that friendship attitudes contribute significantly to the prediction of individual body image concerns and eating behaviors through the discussion of dieting and weight issues with friends (Paxton et al., 1999). High externalized self-perceptions, self-reported teasing, and attributions about the importance of weight and shape for popularity have been shown to predict body esteem and eating behavior (Lieberman, Gauvin, Bukowski, & White, 2001).
Family environment has also been generally described to have a major influence on eating disorders. Patients with eating disorders generally describe a critical environment, featuring coercive parental control (Haworth-Hoeppner 2000). Numerous studies suggest that a chaotic home environment with perceived poor parental caring, poor family communication, and high parental expectations are correlated with eating disorders (Polivy & Hennan, 2002). Self-esteem and the formation of a healthy self-concept are very much influenced by perceptions of how one is viewed by others. Young girls who have low self-esteem may become vulnerable to societal pressures in order to obtain the positive attention they so desire.

In Polivy and Herman’s (2002) review of the research on eating disorders, patients have reported greater parental intrusiveness, specifically maternal invasion of privacy, jealousy, and competition. In contrast, the perceived support for autonomy from parents is associated with less dieting behavior. Mothers of girls with anorexia appear to have great influence on their daughter’s pathology. Mothers who compare their daughters to other girls, think their daughters should lose some weight, engage in competition with their daughters, and generally describe them as less attractive increase their vulnerability to the development of disordered eating (Hill & Franklin 1998). Families also can inadvertently encourage eating disorders by praising slenderness and admiring the discipline and self-control needed to lose weight. Eating disorders can be viewed as a way to cope with the identity problems experienced within the family and as a way of gaining some emotional control.
**Social Rank**

Social ranking is a concept in which individuals determine their relative value and worth within a group through social comparison. Ranking occurs in all social species where there is a competition for resources (food and mates) and is necessary to regulate behavior, maintain group cohesion, and preserve the survival of the species (Troop, Allan, Treasure, & Katzman, 2003). From an evolutionary perspective, those who perceive themselves of low rank on the social hierarchy are at greater risk for developing psychopathology. Perceived low rank on the social hierarchy has been linked with low self-esteem, shame, and humiliation (Gilbert, 2000).

Social rank takes on greater meaning with adolescents as the importance of peer acceptance and where one stands within the social hierarchy are magnified in importance. Social acceptance by peers is highly influential in the development of identity and a healthy self-concept. Peer exclusion and low peer acceptance may result in feelings of loneliness, negative self-worth, anxiety, depression, and academic difficulties (Boivin & Hymel, 1997; Rubin, Bukowski, & Parker, 1998). One’s perception of their social rank and value within relationships is strongly connected with how they choose to interact with others. It has been theorized that low social rank has manifested itself as submissive behavior, as the individual feels powerless and hopeless for change (Troop et al., 2003).
Social Comparison

Social comparison theory (Festinger, 1954) states that individuals will compare themselves to others in an attempt to assess their self-worth and competence. When a perceived discrepancy exists, the individual will adjust his or her behavior to reduce the perceived discrepancy. Research has shown that a greater tendency to engage in everyday social comparison predicts the presence of eating disorder symptoms (Corning, Krumm, & Smitham, 2006). Specifically, body-related comparisons have been implicated in the development of eating disordered behavior (Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999). When women make comparisons to the thin ideal body image, they feel less attractive, and their body dissatisfaction increases (Krones, Stice, Batres, & Orjada, 2005; Tiggemann & Slater, 2004).

Striving to Avoid Inferiority

Social comparison is significant in understanding the development and maintenance of eating disorders. If a young girl over evaluates the importance of body shape and weight in gauging her own self-worth and social competence, she is more likely to compare herself to others in order to determine her social rank. If a discrepancy is perceived, the resulting feelings of inferiority and shame could result in destructive behavior to reduce the discrepancy (i.e., restriction of food, purging, overexercising). Fears of inferiority and shame have been noted as a prominent concern for patients with eating disorders (Goss & Gilbert, 2002). Troop, Allan, Treasure, and Katzman (2003) found that even after controlling for depressive
symptoms, the severity of eating disorder symptoms was associated with feelings of inferiority, unfavorable social comparisons, and submissive behavior. Eating attitudes and appearance anxiety have been shown to be associated with judgments of inferiority, insecure striving to avoid inferiority, and the strong desire for social acceptance (Bellew, Gilbert, Mills, McEwan, & Gale, 2006)

_Coping and Perceived Control in Disordered Eating_

_Avoidance Coping_

Active coping strategies, such as problem-focused approaches and social support seeking, have been associated with lower levels of depression and anxiety (Kendler, Kessler, Heath, Neale, & Eaves, 1991). Avoidance coping, however, has been associated with increased stress (Troop, Holbrey, Trowler, & Treasure, 1994). Eating disorders have been implicated in the research as a coping strategy, used to manage or reduce stress (Bloks, Spinhoven, Callewaert, Willemse-Koning, & Tursma, 2001). Many of these stressful events are considered to be within the normal range of experiences for young women (Schmidt, Tiller, Blanchard, Andrews, & Treasure, 1997). College students diagnosed with an eating disorder have reported higher levels of negative affect compared to controls (Kitsantas, Gilligan, & Kamata, 2003). This might indicate that disordered eating acts as a coping mechanism for modulating intense negative emotions. Therefore, it is logical to hypothesize that utilizing more active strategies to cope with problem situations may have a positive effect on eating disorder symptoms.
In a review of the research on coping and disordered eating, Ball and Lee (2000) discovered consistent results on the coping strategies of patients with eating disorders. Individuals who exhibited eating disorder symptoms demonstrated more emotion-focused coping responses, less behavioral-focused coping, avoided confrontation, and perceived themselves as less able to cope, to tolerate stress, or to solve problems. Eating disorder patients have also been shown to utilize more passive strategies that include reassuring thoughts and less seeking of social support (Bloks et al., 2001). Anorexic patients have shown significantly greater arousal during high-conflict discussions than their mothers and psychiatric controls (Lattimore, Wagner, & Gowers, 2000). This heightened arousal was associated with self-reported difficulties in family problem solving. The challenge remains to identify if skill deficits exist that contribute to avoidance coping and how that relates to the function of disordered eating. The current study comprehensively examines the coping response of adolescent girls with an eating disorder.

Control in Eating Disorders.

One theory that is prominent in the eating disorder literature is the belief that eating disorder symptomatology is a pathologically extreme measure of maintaining control in a world perceived as out of control for the patient (Jarman, Smith, & Walsh, 1999; Surgenor et al., 2003; Tiggemann & Raven, 1998; Vitousek, 1996). Disordered eating can be viewed in the context of an avoidant or passive coping strategy. Rather than utilizing active strategies to cope with unpleasant emotions, the individual may binge, purge, over exercise, or restrict food as a means coping.
Patients with eating disorders tend to display more of an external locus of control and view their family as providing less encouragement and independence than healthy control groups (Williams, Chamove, & Millar, 1990). Eating disorder patients also tend to perceive themselves as having less personal control over events in the world, relative to healthy control groups, even when depression levels were controlled for (Dalgleish et al., 2001). Tiggeman and Raven (1998) argued that anorexic and bulimic patients would show less internal control, a higher desire for control, and a greater fear of losing control compared to a healthy comparison group. As hypothesized, women with eating disorders reported lower internal control and reported a much higher fear of losing self-control, which emerged as the most significant predictor of eating disorder symptomatology.

Interesting evidence has shown that overprotective parenting is a precursor for the development of anorexia in adolescence (Shoebridge & Gowers, 2000). Rezek and Leary (1991) have shown that failure to exert control in one domain will increase the motivation and likelihood to exert control in other domains. This supports the notion that these patients feel highly controlled in their environment and may utilize disordered eating as a means of coping. One particular study showed a clearer relationship between control and eating disorders using a multidimensional measure rather than attributional measures (Surgenor et al., 2003). For example, eating disorders are accompanied by a greater adverse sense of control, over reliance on negatively experienced passive strategies to achieve control, and an underuse of positively experienced active strategies. Overall, a pattern of perceived control and
the development of eating disorders appears to have emerged among adult women. Whether this pattern is consistent among adolescent females remains unclear.

Core beliefs about one's self are significantly constructed during core developmental years within childhood and adolescence. As an individual matures and these core beliefs are reinforced, they become less amenable to change. Therefore, it is important to understand cognitive and behavioral patterns that may contribute to feelings of powerlessness in relationships. The reliance on negatively experienced passive strategies to achieve the perception of control (Surgenor et al., 2003) is an important concept to understand in this population. Passive strategies used to avoid confrontation may consequently reinforce core beliefs relative to one's power, value, and control in personal relationships.

The Role of Cognition in Disordered Eating

The cognitive behavioral model of eating disturbance identifies a distorted perception and dysfunctional system for evaluating self-worth as a central theme maintaining the disorder (Fairburn, Cooper, & Shafran, 2003). Disordered eating is maintained by the positive reinforcement of thinness, which provides a sense of power and control for the individual as they seek approval from others (Garfinkel & Garner, 1982). As most individuals identify a variety of domains that influence their self-worth (e.g., school, relationships, work, parenting, athletics), the theory suggests that people with eating disorders overevaluate the importance of eating, shape, and weight in constructing their identity and self-worth. Consequently, this leads to
pathologically extreme measures of controlling shape and weight, along with rigid beliefs regarding achievement, self-control, and personal value.

**Attentional Bias**

Attentional bias refers to an increased sensitivity or vigilance to relevant environmental cues. For individuals with eating disorders, it refers to attention that is biased toward stimuli related to body shape, weight, and food because the stimuli are threatening to individuals who are extremely sensitive to weight gain (Williamson, Muller, Reas, & Thaw, 1999). Evidence of selective attention toward shape- and weight-related stimuli have been identified in procedures utilizing the Stroop Task (Dobson & Dozois, 2004) or the dot probe task (Boon, Vogelzan, & Jansen, 2000). In more recent studies, participants who were trained to attend to negative shape/weight-related stimuli were more vulnerable to the development of body dissatisfaction compared to individuals trained to attend to either neutral stimuli or negative emotion stimuli (Smith & Rieger, 2006).

In Williamson et al.’s (1999) review, tasks utilizing dichotic listening supported the presence of an attentional bias toward body shape- and weight-related words. Subjects are simultaneously presented with two passages, one to each ear. They are instructed to repeat the passage to one ear and not the other. Target words are inserted into each passage and subjects are asked to detect the target words presented in both ears. Prior research has indicated that subjects do not attend to target words unless they are emotionally stimulating (Foa & McNally, 1986).
Individuals diagnosed with bulimia detected body-related words in the unattended passage more frequently than normal controls (Schotte, McNally, & Turner, 1990).

Current evidence may support a causal impact of attentional bias on the development and maintenance of eating disorders. Biases of attention toward body and weight maintain the pathological preoccupation with appearance and dominate all competing stimuli (Fairburn, Cooper, Cooper, McKenna, Anastasiades et al., 1991). Such extreme body image concerns are implicated in distortion of self-image and exacerbate the negative affect that leads to disordered eating (Stice, 2002).

Core Beliefs and Cognitive Distortions

Cognitive-behavioral theory identifies levels of cognition that become associated with the development and maintenance of psychological disturbance (Freeman, Pretzer, Fleming, & Simon, 2004). Core beliefs, or schemas, are unconditional beliefs that are used for processing information through screening, categorizing, and interpreting information. The strength of the belief is often determined by a number of factors that include how early the belief was developed and how often it was reinforced. For example, if socially anxious individuals have core beliefs that “people are dangerous and threatening,” they are likely to interpret ambiguous events as threatening. Core beliefs can be rigid and less malleable due to the fact they were developed so early in life, and the interpretation of events likely reinforces the belief over time.

Automatic thoughts are the situation-specific thoughts that spontaneously flow through a person’s mind reflecting perceptions of events. These automatic thoughts
develop based on underlying assumptions about the individual’s environment guided by their schemas. For example, an automatic thought of a socially anxious individual may be “I am going to be made fun of or embarrassed.” This automatic thought arose from a core belief that views people as potentially threatening. Beck (1976) has identified errors in logic termed cognitive distortions that lead individuals to erroneous conclusions based on their interpretation of the event. These cognitive distortions lead to faulty conclusions and behaviors that often reinforce the belief.

The cognitive themes for each individual are unique to each disorder. Beck (1967, 1987) identified this as the cognitive content-specificity hypothesis. Understanding the cognitive themes and social information processing style of eating disorder patients can theoretically assist in developing skills to alter both affective and behavioral responses.

Cognitive distortions regarding body image are specific and unique to eating disorders. Dysfunctional beliefs about appearance have predicted dietary restraint, body dissatisfaction, lowered self-esteem, and internalization of the thin ideal body image in adolescent females (Spangler, 2002). The cognitive content of women diagnosed with anorexia has been shown to differ from women who were actively dieting. Anorexics score higher on measures evaluating negative self-beliefs and assumptions regarding the importance of shape and weight. Dritschel, Williams, and Copper (1991) discovered that undergraduate women experiencing bulimic episodes were found to display distorted thinking identified by Beck (1976) as associated with “depressogenic processing” and differed significantly from normal controls, namely, in the areas of personalization (i.e., the tendency to relate external events to oneself
without justification), overgeneralization (i.e., the tendency to draw conclusions on the basis of a single incident), catastrophizing (i.e., the tendency to interpret an event as being a disaster without justification), and selective abstraction (i.e., the tendency to concentrate on a detail taken out of context, ignoring other salient features of the situation).

Shafran, Teachman, Kerry, and Rachman (1999) identified a cognitive distortion termed thought-shape fusion (TSF) that is significantly associated with eating disorder psychopathology. This concept is based on the term thought-action fusion (TAF; Rachman, 1993), a cognitive distortion in obsessive-compulsive disorder. TAF is an empirically supported concept (Rachman, Shafran, Mitchell, Trant, & Teachman, 1996; Shafran, Thordarson, & Rachman, 1996;), defined as the belief that having a negative thought increases the likelihood that the feared event will occur and the belief that having the negative thought is the moral equivalent to carrying out the negative action. TSF is the belief that solely thinking about eating a forbidden food will lead the individual to estimate she gained weight, will report feeling a moral wrongdoing after thinking about eating the forbidden food, and will report feeling fatter after thinking about eating the forbidden food. These thoughts create feelings of anxiety, guilt, and the urge to perform some corrective measure. The corrective measure to cope with the distressing emotions could include dietary restriction, exercise, or purging. This offers important insight into cognitive themes of girls with eating disorders. Eating forbidden foods could lead to beliefs such as “I am not perfect “I am weak “I lack discipline or “I am a pig.” These distorted thoughts
encourage pathologically extreme measures of coping with the resulting negative emotion.

Women with eating disorders reported less healthy core beliefs on the Young’s Schema Questionnaire-Short Version (YSQ-S; Young, 1998) than did women who have recovered from an eating disorder (Jones, Harris, & Leung, 2005). This study indicated that change in core beliefs is associated with recovery from an eating disorder. Cognitive behavioral strategies attempt to initiate change in beliefs and behaviors that are more realistic and adaptive for the client. This is viewed as the mechanism for change that initiates recovery.

Attributions

A number of studies have concluded that adult women with eating disorders make internal attributions for negative events (e.g., “It is my fault the meeting went wrong”) compared to women without diagnosed eating disorders (e.g., “The meeting went wrong because of the problem with the photocopier-no one is really to blame”) (e.g., Dalgleish et al., 2001; Mansfield & Wade, 2000). Women with an eating disorder also had a greater tendency to make internal attributions for negative events, even when differences in depressed mood were controlled for (Morrison, Waller, & Lawson, 2006). Adult women with an eating disorder appear to develop a self-blaming style when evaluating the reasons for negative outcomes. This has implications for the development and maintenance of eating disorders, as these individuals may attribute negative social outcomes to their own appearance.
In adolescent development, peer acceptance and social rank are important variables in the development of a healthy self-concept. It is inevitable that an adolescent will experience peer exclusion and rejection. Considered a normal aspect of development, the perceptions of that event are important in identifying solutions to address the problem. It is hypothesized that girls with eating disorders are likely to make internal attributions, overevaluate appearance-related factors, and choose passive or avoidant behavioral strategies. For example, "I am too fat or ugly to be liked or become popular" would be a likely attribution, rather than considering other possibilities or implementing assertive problem-solving strategies to determine the reason. The distortions in perception are likely to be reinforced through passive coping strategies as they are unable to challenge their reality and experience alternative outcomes through active and assertive problem solving.

_Social Information Processing_

Cognitive psychologists have long been interested in how the interpretation of situations has influenced related emotions and behaviors. One widely studied theory, based on the research of overtly aggressive boys, is Crick and Dodge’s (1994) reformulated social information processing model (SIP). SIP provides empirical support and a theoretical framework for understanding how the cognitive response to social cues impacts the problem-solving and solution implementation process. This model has provided significant advances in the understanding of children’s social adjustment and the possible application across clinical populations is immense.


Encoding and Interpretation of Cues

Crick and Dodge (1994) theorized that during the first two steps of processing, children selectively attend to particular situational and internal cues, encode those cues, and attempt to make sense of them. Knowledge obtained from past experiences is activated as a guide for interpreting situations. Baldwin (1992) conceptualized a model of relational schemas and applied it to the processing of social information. Baldwin drew from the shared insights of cognitive theorists, agreeing that people develop cognitive maps, or interpersonal scripts, based on personal experiences. People then utilize those scripts to interpret social situations and the behavior of others. This is very functional and adaptive, allowing people to use past experiences as a means of learning how to behave and minimize potential harm.

One study found that socially rejected children tend to make aggressive interpretations of videotaped social activity more frequently than their non rejected peers (Strassberg & Dodge, 1987, cited in Crick & Dodge, 1994). This finding may indicate that rejected children selectively attend to potentially threatening cues as a means of preparation for future rejection or aggressive behavior. In fact, early social rejection has been found to act as a social stressor that increases a tendency to react aggressively due to a hyper vigilance to hostile cues (Dodge et al., 2003). Gouze (1987) found that aggressive boys attended to aggressive social cues more than non aggressive cues. As stated earlier, girls with an eating disorder present an attentional bias toward food- and weight-related cues (Boon, Vogelzan, & Jansen, 2000; Dobson
& Dozois, 2004; Williamson et al., 1999; Fairburn et al., 1991; Foa & McNally, 1986; Schotte, McNally, & Turner, 1990; Stice, 2002). This may represent the importance placed on shape and weight for individuals with an eating disorder. When a young girl internalizes the culturally ideal body image, a self and relational schema may develop. Consequently, an over evaluation of shape and weight in acceptance within relationships is strengthened.

Causal attributions are inferences made by individuals about the reason(s) why particular social events have occurred (Weiner & Grahm, 1984, cited in Crick & Dodge, 1994). For example, inferences about why a teenage girl was ignored by a peer in the hallway will have a large bearing on how she develops responses to address the interaction. A substantial amount of data supports the links between attributions made and subsequent behavioral choices (e.g., Crick & Dodge, 1996, 1994; Crick, Grotpeter, & Bigbee, 2002; Crick, 1996). Specifically, the hostile intent attributions of aggressive boys have shown to limit the generation of responses and influence aggression (Crick & Dodge, 1994). Women with an eating disorder have demonstrated a greater tendency to make internal attributions for negative events, even when differences in depressed mood were controlled for (Morrison, Waller, & Lawson, 2006). They tend to develop a self-blaming style when evaluating the reasons for negative outcomes. Therefore, they may be more likely to attribute being ignored in the hallway to personal attributes such as “there must be something wrong with me “I must have done something wrong or “I am too ugly and fat to be noticed.” These attributions may contribute to passive or avoidant coping strategies, instead of utilizing active coping strategies to either confirm or disconfirm their original belief.
Clarification of Goals

After interpreting the situation, Crick and Dodge (1994) hypothesized that the third step in the SIP model is to formulate and clarify a goal. In this situation, goals are aimed at producing a particular outcome. Goals for social situations may include both internal (e.g., regulating negative affect) and external (e.g., getting noticed by a boy) states or outcomes. It is believed that goal orientations are evoked by their interpretation of relative internal or external cues. For example, if the teenage girl attributes being ignored in the hallway to the person’s desire not to be seen with somebody so unattractive, it will likely create intense negative emotions that stimulate a goal. The goal may be to circumvent further embarrassment through avoiding that individual or include an assertive strategy to confront the individual to confirm or disconfirm the attribution and modulate the intense affect. In understanding disordered eating, the goal of the individual may involve changing appearance through food restriction and exercise to avoid future embarrassment and gain greater control in relationships.

In Crick & Dodge’s (1994) review of the research on goal clarification, it was evident that social maladjustment was directly related to the construction and pursuit of goals that were inappropriate to the social situation (Asher & Renshaw, 1981, cited in Crick & Dodge, 1994; Dodge, Asher, & Pankhurst, 1989, cited in Crick & Dodge, 1994). Overtly aggressive and rejected children may construct and pursue goals to achieve power and control in a situation that consequently damage peer relationships (Chung & Asher, 1996; Rose & Asher, 1999). In a study on relational aggression,
children chose relationally aggressive strategies to achieve goals of self-interest, personal control, revenge, avoiding trouble, and maintaining relationships among the peer group (Delveaux & Daniels, 2000).

Response Access or Construction

The fourth step in the SIP model includes accessing behavioral responses from long-term memory. In Crick and Dodge’s (1994) review of the literature on response access, three important aspects have been considered by researchers. First, the greater number of behaviors generated in response to social stimuli appears to increase the likelihood of an adaptive response. Research has demonstrated that socially rejected and aggressive children access fewer behaviors in response to hypothetical stories (Pettit, Dodge, & Brown, 1988; Slaby & Guerra, 1988). This is problematic when maladaptive responses are primarily generated. Response generation is a specific component of problem-solving skills that will be measured in this study. Secondly, the actual content of the responses generated has been studied. Responses accessed by rejected children were more avoidant, less friendly, and more aggressive when compared to more popular peers (Asher, Renshaw, & Geraci, 1980). These strategies are likely to lead to more negative outcomes and further harm peer relationships. Finally, the order in which children access particular types of responses has also been evaluated. Even when aggressive children are able to access an initial response that is competent, the following responses tend to be more aggressive and maladaptive than those accessed by peers (Richard & Dodge, 1982). It is
hypothesized that adolescent girls with an eating disorder will access more passive or avoidant strategies based on their own relational schemas.

Response Decision and Enactment

In step 5 of the social information processing model, it is hypothesized that children evaluate the available responses and select the one that will provide the most favorable outcome. Outcome expectations have been presented in the research by asking the participant to evaluate what would happen in response to the vignette (Crick & Dodge, 1994). Evidence has suggested that assertive behaviors are viewed more negatively by neglected children (Crick & Ladd, 1990), influencing the engagement in more submissive and avoidant behaviors. If an individual views the potential outcome as negative they will likely dismiss the response. It is hypothesized the girls with an eating disorder will choose less assertive responses to social dilemmas due to the fear of a negatively evaluated confrontation or rejection.

Social Problem Solving

Problem solving is a process by which individuals attempt to identify effective solutions for specific problems encountered in day to day living (D’Zurilla & Goldfried, 1971). The process is complex and includes how an individual collects information and interprets their environment. Social information processing describes how information is processed and interpreted, influencing the selection of a behavioral goal, the generation of response alternatives, and the selection of a
response that will produce the most favorable outcome (Crick & Dodge, 1994). The goal of social problem solving would be to improve or overcome a problematic situation or reduce the emotional distress that it produces (D'Zurilla et al., 2004). Research has shown that aggressive and rejected adolescents are more likely to display biased information processing patterns that influence their interaction with peers (Lochman & Dodge, 1994). Based on this evidence, it is important not only to identify the problem-solving strategies, but to evaluate the interpretation of the event and subsequent strategies that may confirm or reject the original perception.

Social Problem Solving and Adolescence

Interpersonal relationships can be complex and unpredictable. Adolescence signifies a developmental period in which people begin to understand how to cultivate life-long relationships that are so important for support, happiness, and overall well-being. Navigating the complexities of these relationships is critical to healthy adjustment during adolescence and is an important factor in the development of core beliefs about relationships. Social problem solving provides a theoretical framework and working model to address the skills needed to navigate the complexities of interpersonal relationships and to develop the social competence needed for healthy development.

The following data suggests an established link between social problem-solving skill deficiencies and specific problematic psychological, social, and health behaviors in adolescence. In a study of 668 high school students, as problem-solving scores increased, perceived distress and personal problems decreased (Frauenknecht
& Black, 1996). Deficiencies in problem-solving skills were also correlated with interpersonal stress and depressive symptoms in adolescents (Glyshaw, Cohen, & Towbes, 1989; Hammen, Burge, Daley, Davila, Paley et al., 1995). In a systematic review of the literature, it was concluded that there is some evidence for an association between suicidal behavior and problem-solving deficits in adolescents (Speckens & Hawton, 2005).

**Problem Solving and Eating Disorders**

Bulimic women have reported less perceived social support from friends and family and more negative interactions and conflict, less social competence and were rated as less socially effective by observers unaware of their group membership (Grissett & Norvell, 1992). Their perceptions of relationships can be comparatively linked with problem-solving ability and influence interactions with others. In other words, if alternative explanations for the person's behavior or the source of conflict are not identified, the individual's assumptions become their indisputable reality. If in fact the individual is able to understand the complexity of human behavior and possesses the skills to identify other possible explanations for the person's behavior, he or she is more likely to take action and identify solutions to test their reality.

Patients with eating disorders have been found to use more avoidant and emotion-focused coping strategies to manage life stressors (Troop, Holbrey, Trowler, & Treasure, 1994; Yager, Rorty, & Rossotto, 1995). The social problem-solving process teaches an individual the cognitive and behavioral coping skills to manage life's problems. Soukup, Beiler, and Terrell (1990) investigated stress, coping style, and
problem-solving ability among 45 inpatient females diagnosed with anorexia or bulimia. The sample consisted of individuals who ranged in age from 15 to 35 years. In this study, both bulimic and anorexic patients displayed lower levels of self-confidence, were more prone to depression, and were anxious compared to controls. These individuals also displayed more difficulty coping with stress and avoided confronting their difficulties. Their avoidant problem solving style was indicative of low confidence in their ability to effectively problem-solve. One concern with this study is the instrument used to measure problem solving. The Problem-Solving Inventory (Heppner & Petersen, 1982) identifies an individual's perception of their problem-solving ability, behavior, and attitudes. It produces a score related to problem-solving confidence, approach-avoidance style, and personal control. It fails to identify problem-solving skill deficits in areas such as problem identification, alternative generation, consequence prediction, and implementation / evaluation/reorganization. The large age range of participants also fails to address the developmental context of each individual and makes it difficult to generalize results. The social context in which each individual operates is so different that one measure of problem-solving ability that is not specifically designed for an adolescent is unlikely to yield valid results. The course and degree of severity of the eating disorder may significantly differ between a 15-year-old girl and 35-year-old woman, thus indicating less malleable cognitions and behaviors. It is imperative to understand the personal realities that are specific to an adolescent population with an instrument that adequately measures their skill deficits.
The issue of adequately measuring the problem-solving abilities of women with eating disorders was addressed through the development of the Anorexia and Bulimia Problem Inventory--Revised (ABPI--R; Espelage, Quittner, Sherman, & Thompson, 2000). This instrument is a behavioral role play specifically designed to measure problem-solving ability in college-age women. This measure includes 38 vignettes related to eating and weight, academic issues, family concerns, and interpersonal relationships. The ABPI--R was validated in 44 clients between the ages of 17 and 27 who met criteria for anorexia or bulimia. The results indicated that women with clinical eating disorders had lower social competence in four domains (eating and weight, academic issues, family concerns, and interpersonal relationships) when compared with healthy controls. Interestingly, women with eating disorders indicated they would either excessively binge or purge in response to at least one item unrelated to food or weight, demonstrating that disordered eating as a coping response is not limited to problems related to eating and weight. Only 5% of the control participants indicated they would engage in disordered eating behavior to cope in response to at least one item unrelated to eating or weight.

The ABPI--R was utilized in a study that examined interpersonal problem solving, relationship conflict, and social support among women with and without subclinical eating disorders (Holt & Espelage, 2002). Overall, results suggested that women with subclinical eating disorders had difficulties generating effective solutions to many common situations compared to women without subclinical eating disorders. It was hypothesized by Holt and Espelage (2002) that college-age women who demonstrated ineffective problem solving in interpersonal domains would have
Chronic conflict and strife in those relationships. This stress could consequently exacerbate disordered eating behaviors. Surprisingly, women with and without subclinical eating disorders did not differ significantly in their perceptions of conflict in relationships or social support from friends and family. This finding contradicts previous research (Grissett & Norvell, 1992) that suggests women with eating disorders perceive less support from family and friends. The results of this investigation should be interpreted with caution. The women in this study were neither diagnosed with nor in treatment for an eating disorder. Also, all participants were college-age female students, and the results are only generalizable to this population.

*Eating Disorders and Assertiveness*

It is important to distinguish problem solving from solution implementation. An individual may have the cognitive skill and capacity to develop a number of effective solutions to problems, yet lack the behavioral skills to actually carry out those solutions. Both sets of skills are often necessary in problem-solving therapy and are important factors for effective functioning and social competence; therefore, it is important to combine the skills to maximize positive outcomes (McFall, 1982, cited in D’Zurilla, et al., 2004).

The concept of assertiveness can be directly linked to conflict avoidance, as anorexic and bulimic patients have been proven to display a passive aggressive style of confrontation (Surgenor, et al., 2003). The controlling of food and body weight can be interpreted as an indirect attempt to assert oneself and gain power in the greater
context of family, friends, and society. Change in body weight can initiate positive feedback from family and peers, enabling the individual to feel power through passive aggressive means of assertion. Within the problem-solving process, those who lack assertiveness will display a difficulty in implementing generated solutions and rely upon passive or avoidant coping strategies.

Holleran, Pascale, and Fraley (1988) attempted to study the degree of assertiveness in 205 college-age females. In this study, the researchers utilized paper and pencil measures to determine whether certain personality traits provided stronger predictive ability in identifying bulimic populations. Utilizing the Assertion Inventory (Gambrill & Richey, 1975), a 40-item inventory in which respondents report on a 5-point scale their probable behavior in given situations, such as turning down requests, differing with others, and initiating social contacts, assertiveness was measured and compared to scores on a measure of bulimic symptomatology. The results indicated a statistically significant inverse relationship between assertiveness and high scores on the bulimia measure.

Williams and Chamove (1990) examined assertiveness in 31 anorexic and bulimic females between the ages of 15 and 35. They were compared to psychiatric controls, dieters, and healthy controls utilizing a self-report measure designed to assess the degree of assertiveness in terms of self-expression in social situations. The eating disorder group exhibited lower degrees of personal assertion compared to all other groups.

Sixty-two adult anorexic and bulimic patients were compared to obese dieters, non obese dieters, and normal controls on constructs that included assertiveness
(Williams, Power, Millar, Freeman, Yellowless et al., 1993). The results utilizing the Rathus Assertiveness Schedule (Rathus, 1973), showed the eating disorder groups were less able to display self-assertion than the dieting groups and controls. Rogers and Petrie (1996) used the same instrument to measure assertiveness in undergraduate women displaying anorexic symptomatology. This study unexpectedly found no relationship between assertiveness and anorexic symptoms.

Rogers and Petrie (2001) utilized a measure of assertiveness specific to a college-age population. The College Self-Expression Scale (CSES; Galassi, DeLo, Galassi, & Bastien, 1974) measures three aspects of assertiveness: positive feelings, negative feelings, and self-denial. Participants were 97 female undergraduates who were given a variety of measures to assess eating disorder symptomatology, obsessiveness, dependency, hostility, locus of control, self-esteem, and assertiveness. A negative relationship was found between assertiveness and anorexic and bulimic symptoms.

Huon and Walton (2000) administered the College Self-Expression Scale (CSES; Galassi et al., 1974) to an adolescent population of individuals that had begun dieting in the past 6 months and girls who had never dieted. In this study, a total of 124 girls ages 12 to 16 were matched on the school attended, grade, age, language spoken at home, and country of birth. Contrary to their prediction, the two groups did not differ on assertiveness. Their analysis revealed that parental conformity, parental compliance, and peer competitiveness play the most important role in discriminating between the never-dieters and the initiating dieters. However, this offers little information on a clinical population of adolescent girls who have been diagnosed
with an eating disorder. Previous research on assertiveness has left significant gaps in understanding the interpersonal profiles of adolescent females diagnosed with an eating disorder. The research has been generally focused on a non-clinical college population and provided mixed results. The current study will attempt to better understand the degrees of assertiveness in a clinical adolescent population, utilizing a measure validated for use with adolescents.
Chapter Three: Hypotheses

1. Adolescent females diagnosed with an eating disorder will identify significantly more hostile intent attributions when faced with an ambiguous social dilemma, compared to a non clinical control group. This is based on findings that adult women with eating disorders make greater internal attributions for negative events compared to a non clinical population of adult women. Adult women with an eating disorder also had a greater tendency to make internal attributions for negative events, even when differences in depressed mood were controlled for (Morrison, Waller, & Lawson, 2006). Unfortunately, little if any evidence has been provided about the social information processes of adolescent girls diagnosed with an eating disorder. It is common knowledge in the treatment community that adolescence is a critical period for the development of a healthy body image and eating behaviors. Rates for anorexia nervosa are highest for females 15 to 19 years old and constitute approximately 60% of all identified female cases (Van Hoeken, Seidell, & Hoek, 2005). The identification of cognitive processing deficits may address existing barriers to treatment progress and aid in the identification of innovative treatment strategies.

2. Adolescent females diagnosed with an eating disorder will identify more intense negative emotions in response to ambiguous social dilemmas as compared to a non clinical control group. This is based on prior research that shows college students diagnosed with an eating disorder report higher levels of negative affect than
controls (Kitsantas et al., 2003), further supporting the theory that disordered eating may function as a coping mechanism for modulating intense negative affect.

3. Adolescent females diagnosed with an eating disorder will identify more avoidant strategies to cope with ambiguous social dilemmas as a means of conflict avoidance than those in the non clinical control group. This is based on a review of the research that demonstrates individuals who exhibited eating disorder symptoms demonstrated more emotion-focused coping responses, less behavior-focused coping, avoided confrontation, and perceived themselves as less able to cope, to tolerate stress, or to solve problems (Ball & Lee, 2000). Furthermore, it is predicted that the eating disorder group will identify more intrapunitive avoidant coping strategies that fail to effectively modulate the intense affect created from a hostile attributional bias. This would further support the belief that specific coping deficits in problem solving are evident within this population, which may contribute to feelings of control loss and helplessness.

4. Adolescent females diagnosed with an eating disorder will be less likely to directly question the provocateur as a social problem-solving strategy when compared to the non clinical control group. This is also based on the research cited within the previous hypothesis that suggests individuals with an eating disorder avoid confrontation and rely on more emotion-focused coping strategies (Ball & Lee, 2000).
5. Adolescent females diagnosed with an eating disorder will display lower scores on a measure of social problem-solving skills than the non control group. This is based on previous research that suggests these skills are highly associated with social competence and adaptation, stress, and various forms of maladjustment and psychopathology (D’Zurilla & Nezu, 1990). Adult women diagnosed with bulimia have reported less perceived social support, more negative interactions and conflict, and less social competence as compared to a healthy control group (Grissett & Norvell, 1992). Disordered eating symptoms in adults have been associated with less effective problem solving in eating, weight, and interpersonal relationship issues that cannot be explained by depression (Espelage, Quitner, Sherman, & Thompson, 2000). To the investigator knowledge, this study is the first attempt to study the problem-solving skills of adolescent girls diagnosed with an eating disorder.

6. Adolescent females diagnosed with an eating disorder will display lower scores on a measure of interpersonal assertiveness as compared to the non clinical control group. This is based on prior research that has shown anorexic and bulimic patients to be less assertive than control groups (e.g., Williams et al., 1990; Williams et al., 1993; Williams, Taylor, & Ricciardelli, 2000; Rogers & Petri, 2001). However, the majority of these participants were over the age of 18, and measures of assertiveness were specific for a college population. Deficits in assertiveness likely contribute to more avoidant coping strategies that fail to confirm or disconfirm
one's original attribution about an event. This is a significant skill in the examination of one's interpersonal reality.
Chapter Four: Methods

Participants

Adolescent females between the ages of 14 and 17 were recruited to participate in this study \((N = 114)\). Patients undergoing treatment for a diagnosed eating disorder at Penn State Milton S. Hershey Medical Center’s Adolescent Eating Disorder Program \((N = 50)\) were compared to a non clinical control group of students attending Salisbury Middle and High School in Allentown, PA \((N = 64)\).

The Adolescent Eating Disorders program specializes in the comprehensive treatment of children and adolescents diagnosed with an eating disorder. Each participant met clinical criteria for anorexia nervosa \((N = 30)\), bulimia nervosa \((N = 11)\), or eating disorder not otherwise specified \((N = 9)\) at the time of admission and were receiving treatment in the outpatient, intensive outpatient, or partial hospitalization program. Subjects were recruited during scheduled appointments in which a parent/guardian was present. Potential subjects and parents were informed about the availability of a study examining how adolescent girls diagnosed with an eating disorder solve social problems. For those interested, informed consent was obtained from the parent/guardian and assent from the subject. The measures were administered and completed when subjects were on site for treatment. Three subjects were given permission to finish the measures at home and return them during their next appointment.

The average age of subjects in the eating disorder group was 15.83 \((SD = 1.15 \text{ year})\). The length of treatment varied significantly among subjects. The average length was 9.98 months since initial treatment began \((SD = 11.1 \text{ months})\) for 48
subjects who chose to report that data. The range of treatment varied from 0 to 60 months. The racial composition was predominately White (84%). The demographic statistics are outlined in Table 1.

The control group consisted of students \(N = 64\) who volunteered from Salisbury Middle and High School in Allentown, PA. Subjects were informed of a study examining how adolescent girls solve social problems via classroom presentations in grades 8 to 12 by the primary researcher. Consent and assent forms were read to all potential participants and parent/guardian consent forms were distributed with the contact information of members of the research team. Those who received parental/guardian permission and were not currently undergoing treatment for a mental health condition were eligible to participate in the study. Each participant in the control group completed the Eating Attitude Test --26 (EAT--26; Garner, Olmstead, Bohr, & Garfinkel, 1982) to rule out any eating disorder symptomatology. Five subjects scored at or above the cutoff of 20 and their data were excluded from the study. Those five subjects' parents/guardians were notified of their score and a referral to a local mental health professional who specializes in the assessment and treatment of eating disorders was provided. The average EAT--26 score of the eligible subjects was 3.80 \((SD = 4.12)\), indicating a low probability that the nonclinical sample included subjects with an eating disorder. The final sample included 59 subjects with an average age of 15.45 \((SD = .88)\). The racial composition of the control group was also predominately White. The demographic statistics are outlined in Table 1.
Table 1

**Demographic Statistics**

<table>
<thead>
<tr>
<th></th>
<th>Eating Disorder Group</th>
<th>Non Clinical Control Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Subjects</td>
<td>( n = 50 )</td>
<td>( n = 64 )</td>
</tr>
<tr>
<td>Diagnosis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AN</td>
<td>30</td>
<td>*</td>
</tr>
<tr>
<td>BN</td>
<td>11</td>
<td>*</td>
</tr>
<tr>
<td>EDNOS</td>
<td>9</td>
<td>*</td>
</tr>
<tr>
<td>Age</td>
<td>( M = 15.83 ) (SD = .15)</td>
<td>( M = 15.45 ) (SD = .88)</td>
</tr>
<tr>
<td>Treatment Length</td>
<td>( M = 9.98 ) months (SD = 11.1)</td>
<td>*</td>
</tr>
<tr>
<td>Range of Treatment</td>
<td>0 to 60 months</td>
<td>*</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>84%</td>
<td>90%</td>
</tr>
<tr>
<td>Hispanic/Latino</td>
<td>6%</td>
<td>4%</td>
</tr>
<tr>
<td>Black</td>
<td>4%</td>
<td>1%</td>
</tr>
<tr>
<td>Other</td>
<td>6%</td>
<td>5%</td>
</tr>
<tr>
<td>EAT--26 Score</td>
<td>*</td>
<td>( M = 3.80 ) (SD = 4.12)</td>
</tr>
</tbody>
</table>
Measures

Social Dilemma Survey (SDS)

Social information processing variables were measured using the Social Dilemma Survey (SDS), which was constructed for use in this study. The SDS was modeled after other measures that successfully utilized hypothetical vignettes to measure cognitive processing mechanisms in children (e.g., Chung & Asher, 1996; Crain, Finch, & Foster, 2005). The four vignettes in this study depicted hypothetical ambiguous provocation situations (relational vignettes), followed by several questions assessing intent attributions, affect, coping style, and the likelihood the subject would confront the provocateur to confirm the subject's initial attribution. Each vignette portrayed a situation in which the subject was asked to imagine if the situation was happening to them. The vignettes portrayed a social dilemma in which the subject was experiencing a potential rejection or slight. The intent of the slight was ambiguous, thus allowing the subject to project their interpretation of the provocateur's intent.

This measure differed from past attempts at assessing social information processing variables by providing the subjects with open-ended questions. This opened-ended approach is believed to provide a more pure projection of relational schemas, rather than having the subjects primed with a hostile explanation by inquiring about the likelihood of hostile intent. The hypothetical vignettes in the SDS were developed from focus group interviews with ninth grade girls of similar age and socio economic status who discussed common relational incidents in which rejection may or may not have been present. Once the vignettes were developed, the measure
was given to twelve ninth grade girls to examine if the vignettes were indeed ambiguous. Changes were made by the research team to utilize language that maintained ambiguity. Until this study, this type of measure has never been administered to a population with eating disorders.

**Intent attributions.** Intent attributions were measured by asking participants to answer “Why do you think this happened?” following each vignette. Answers were assessed and coded as hostile intent, benign intent, or ambiguous intent. Intent attributions were compared across groups to determine if significant differences existed between groups.

**Affective intensity.** The emotional experience of each subject was measured by asking the question “How would it make you feel if it happened to you?” They were asked to circle one emotion from a list that would best describe the way they would feel. The list consisted of: sad, relieved, disappointed, annoyed, angry, frustrated, nervous, happy, embarrassed, lonely, scared, or unaffected. Subjects were then asked to circle how strong that feeling would be on a 5-point rating scale (1 = not strong, 5 = extremely). Scores were summed and averaged across all four vignettes.

**Coping.** Subject coping style was assessed by asking the question “What would you do if this happened to you? Why?” Subject responses were assessed and coded to determine if either an approach or avoidant coping mechanism was employed. To further identify the nature of the coping strategy applied, avoidant strategies were coded as either *intrapunitive* or *hedonistic*. These terms were used to
further identify coping mechanisms employed by adolescents previously identified within the Adolescent Coping Scale (Frydenberg & Lewis, 1993) and further distinguish a coping strategy as either adaptive or non adaptive. In addition, approach coping strategies were coded as either adaptive or non adaptive.

The coping strategy coded as *intrapunitive avoidance* reflects a style characterized by avoiding the problem and coping non adaptively with the emotions the problems generate. Examples include choosing to binge and purge, restricting food, other forms of self-abuse, isolating oneself, self-blame, and not coping. It is associated with a hostile intent attribution and fails to confirm or disconfirm the original attribution, while nonadaptively coping with the emotional response.

In contrast, *hedonistic avoidance* reflects a coping style characterized by problem avoidance and adaptive control of the emotions that the problem generates. Examples of *hedonistic avoidance* include seeking relaxing diversions, focusing on the positive, wishful thinking, seeking to belong, investing in close friends, seeking social support, and minimizing the problem. Although *hedonistic avoidance* fails to confirm one's original attribution, the strategy assists in coping with the emotions the problem generates. An avoidant strategy may also be most adaptive if benign intent is attributed to the provocateur. For example, “She must have not sent me an invitation because it is just assumed I would be invited” may elicit an avoidant strategy as if to not “make a big deal of it.” Thus the minimization of the problem would allow for the coding of *hedonistic avoidance*.

Approach coping mechanisms reflect an active strategy in which the individual seeks to confirm their original attribution of the event. This most often
includes questioning the provocateur to determine the reason for the perceived slight. It also includes other means to confirm the original attribution, such as indirectly questioning the provocateur, approaching the provocateur regarding other topics to determine if he or she is upset with them, and utilizing close friends to determine the reason. If the approach by the respondent was aggressive and created hostility between the two individuals it was coded as a nonadaptive approach mechanism. Subjects were also assessed on how likely they were to directly question the provocateur as an approach coping strategy. Subjects were asked to circle how likely they would be to directly question the individual on a 5-point rating scale (1 = not at all likely, 5 = very likely).

_Social Problem-Solving Inventory for Adolescents (SPSI--A)_

Social problem-solving skills were measured by the Social Problem-Solving Inventory for Adolescents (SPSI--A). The SPSI--A is a 64-item inventory that is a valid and reliable measure of social problem-solving skills in adolescents (Frauenknecht & Black, 1995). Items are rated on the 5-point Likert scale and are designed to assess covert and overt self-reported dispositions of problem-solving behavior, regardless of whether the behaviors occur or not in social or personal context (Frauenknecht & Black, 1995). The test consists of three scales assessing Automatic Process, Problem Orientation, and Problem-Solving Skills. An overall Social Problem-Solving Skills score was utilized to compare the two groups. Frauenknecht and Black (1995) report alpha coefficients for total scale reliability were above $r = .93$ and coefficients for the three scales were all above .81. Stability
results indicated the SPSI--A is a relatively stable instrument between first and second administration over a 2-week period. Correlation coefficients for SPSI--A total scores and the three scales between test administrations were $r = .83, .67, .78,$ and $.77,$ respectively, $p < .001$. Construct validity was evaluated by correlating the SPSI--A with the Problem-Solving Inventory (PSI; Heppner & Peterson, 1982). The PSI is a problem-solving instrument derived from D'Zurilla and Goldfried's (1971) model. The correlation between the SPSI-A total score and the PSI total score was $r = .82, p < .001$. The high degree of commonality suggests similar constructs are being measured. However, the PSI is designed for adults, not for adolescents. To this investigator knowledge the SPSI--A has never before been administered to a population with eating disorders.

**Interpersonal Behavior Survey--Short Form (IBS)**

Interpersonal assertiveness was measured by the Interpersonal Behavior Survey--Short Form (IBS; Mauger, Adkinson, Zoss, Firestone, & Hook, 1980). The IBS short form is 133 items taken from the 272-item measure. Mauger and Adkinson (1993) report the IBS scales have adequate internal consistency and stability over time. The reliability characteristics of the IBS were determined using a test-retest format over a 2-day and a 10-week period by assessing the internal consistency of each scale. The test-retest reliabilities range from the low .70s to the mid .90s and compare well with other scales in the field (Mauger & Adkinson, 1993). The reliability of the General Assertiveness Short Form Scale yielded scores of .90. Factor analytic studies have consistently produced two distinct factors, an assertiveness
factor and an aggressiveness factor. Correlations between the assertiveness and aggressiveness scales are in the predicted low to zero range ($r < 1.0$); indicating they are basically independent response classes (Mauger & Adkinson, 1993). The IBS is correlated with several well-known personality inventories using samples from a number of populations.

The short form is considered comparable to the long form and utilized in research and clinical use where time is limited. The strength of this measure is evident in its ability to distinguish assertive behavior from aggressive behavior. A general overall Assertiveness score is provided with four other specific scales to better identify the type of behavior. The Frankness scale reveals the individual’s willingness to clearly communicate true feelings and opinions, even though these expressions may be unpopular or may cause a confrontation with others. The Praise scale reflects one’s degree of comfort in giving and receiving praise. The Requesting Help scale measures the willingness to ask for reasonable favors and help when they are legitimately needed. The final scale is the Refusing Demands scale which indicates the willingness to say no to unreasonable or inconvenient demands from others.

The IBS also reveals a General Aggressiveness score to distinguish assertive behavior from aggressive behavior. Four scales are provided to better understand the nature of aggressive behaviors. This includes the Expression of Anger scale, which is an indication of the tendency to lose one’s temper and express one’s anger in a direct, forceful manner. The Disregard for Rights scale measures the tendency to ignore the rights of others in order to protect oneself or to gain an advantage. The Verbal
Aggressiveness scale gives an indication of the using of words as weapons by doing such things as making fun of others, criticizing, and putting others down. The Physical Aggressiveness scale reflects the tendency to use or fantasize using physical force. Clear instructions were provided, and the items consist of relatively brief statements that were answered using a true-false format. Items are written in the present tense and require no more than a sixth grade reading level, so that a broad range of populations can be assessed (IBS; Mauger, Adkinson, Zoss, Firestone, & Hook, 1980).

Eating Attitude Test--26

The Eating Attitude Test --26 (EAT--26; Garner, Olmstead, Bohr, & Garfinkel, 1982) was administered to the control group to rule out the presence of eating disorder symptomatology. This self-report screening tool consists of 26 items assessing psychological and behavioral symptoms associated with anorexia and bulimia. For each item, participants indicated the degree to which the statement applies to them on a 6-point scale, ranging from always to never. Current height, weight, and age were provided to indicate current Body Mass Index. The cutoff score of 20 or above has been shown to have an accuracy rate of at least 90% when used to diagnose those with and without eating disorders (Mintz & O’Halloran, 2000). For the purpose of this study, the EAT--26 was used as a screening measure to differentiate the two groups and eliminate individuals from the control group who demonstrated abnormal eating behavior. Any participant who scored at or above the cutoff of 20 was excluded from the study.
Design and Procedures

This study utilized a between groups design examining the social problem-solving approach of adolescent girls diagnosed with an eating disorder. These specific cognitive and behavioral skills are theorized to play an important role in perceived control and coping. This design was selected to determine if differences existed between adolescent females in treatment for a diagnosed eating disorder and a nonclinical control group on measures assessing social information processing variables, social problem-solving skills, and interpersonal assertiveness.

For those receiving treatment at Penn State Milton S. Hershey Medical Center, patients were informed of a study examining how adolescent females diagnosed with an eating disorder solve social problems. Potential subjects and their parents were informed of the study during scheduled appointments. They were informed that participation was completely voluntary and participation would not impact their treatment or treatment duration. Those who were interested in participating were provided with a detailed parental consent and child assent form that thoroughly outlined the study. A parent/guardian signature and child assent form signature were obtained for all subjects. The contact information for all research team members was made available to address any questions or concerns. The questionnaires given were made available to parents/guardians upon request.

Those who agreed to participate were given the option of completing the measures following their appointment or to schedule for a more convenient time at a later date. All subjects were assigned a unique code number that preserved their confidentiality. The document linking the unique code number to the identifying
information was kept password protected and only the research team has access to the password. Any hard copy of identifying information was secured in a locked filing cabinet. A member of the research team informed all participants that they will not be identified by name, their scores are completely confidential, and in no way would any aspect of treatment be impacted by how they answered any of the questions.

Each participant filled out a brief demographic section to identify age, grade, race/ethnicity, current diagnosis, and length of treatment. Following the completion of the demographic section, each individual was administered the Social Dilemma Survey (SDS), the Social Problem-Solving Inventory for Adolescents (SPSI--A), and the Interpersonal Behavior Survey (IBS), in that order. A scripted protocol was followed in accordance with the standardization procedures for each instrument. Following the completion of the questionnaires, each measure was checked for completion by a member of the research team.

The nonclinical control group consisted of volunteers from Salisbury Middle and High School in Allentown, PA. Volunteers were informed of a study examining how adolescent girls solve social problems during a classroom presentation by the primary researcher. For those interested, a detailed account of the study was provided in the consent and assent forms. Parent/Guardian consent forms were provided to all interested students. Those who received parental permission and were not currently receiving treatment for a mental health condition were eligible for the study.

In the middle school, testing took place in the school's cafeteria to accommodate the large number of students and to separate the participants from the rest of the class. Within the high school, testing took place in a large conference room.
that accommodated approximately 6 to 8 subjects at a time for testing. The primary researcher informed all participants that they would be given a code number to preserve confidentiality. The document linking the unique code number to the identifying information was kept password protected and only the research team has access to the password. All hard copies of identifying information were secured in a locked filing cabinet. Each subject was reminded that a score above the standardized cutoff on the EAT--26 indicates the possibility of a clinically diagnosable eating disorder, and in such cases, parents/guardians would be notified, along with a referral to a local mental health professional.

Students were then instructed to read the directions completely and were encouraged to ask any questions. Each participant first completed a brief demographic section identifying their age, grade, race/ethnicity, and the existence of any major medical or mental health condition that requires any treatment. Once the form was completed, they were administered the EAT--26 as an eating disorder screening tool. Following the screening measure, all three remaining questionnaires were administered to the nonclinical control group in the same standardized manner as was used in the clinical group. A scripted protocol in accordance with the standardized administration procedures was followed.
Chapter Five: Results

Social Information Processing Variables

Intent Attributions

It was predicted that when compared to a nonclinical sample, adolescent females diagnosed with an eating disorder would identify the provocateur's intent in ambiguous social dilemmas as significantly more hostile. The total number of hostile intent attributions across vignettes was compared between the groups. As predicted, results indicated that adolescent girls with an eating disorder showed a significantly greater tendency to attribute hostile intent to ambiguous social dilemmas ($M = 2.22, SD = 1.06$) than did the control group ($M = 1.22, SD = 1.08$), $t(107) = -4.86, p = .000, d = .94$. For the eating disorder group, 55.5% of attributions were coded with hostile intent, compared to only 30.5% of the control group.

In addition, the nonclinical control group displayed a significantly greater tendency to identify the provocateur's intent as benign ($M = 1.63; SD = 1.23$) in comparison to the eating disorder group ($M = 1.16; SD = .88$), $t(107) = 2.24, p = .028, d = .44$. Only 29.0% of the eating disorder group's responses identified benign intent, compared to 40.6% of the control group's responses. The nonclinical control group was also significantly more likely to recognize the ambiguity of the social dilemma ($M = 1.15; SD = .98$) than the eating disorder group ($M = .62; SD = .83$), $t(107) = 3.03, p = .003, d = .58$. Only 15.5% of the eating disorder group's responses identified the ambiguous nature of the dilemma, compared to 28.8% of the control group. Table 2 and Figure 1 illustrate the findings.
Table 2

*ED vs. Nonclinical: Mean Number of Intent Attributions*

<table>
<thead>
<tr>
<th>Subjects</th>
<th>Hostile Intention</th>
<th>Benign Intention</th>
<th>Ambiguous Intention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eating Disorder</td>
<td>2.22**</td>
<td>1.16*</td>
<td>.62*</td>
</tr>
<tr>
<td>Non-Clinical</td>
<td>1.22**</td>
<td>1.63*</td>
<td>1.15*</td>
</tr>
</tbody>
</table>

*p<.05; **p<.001

* Figure 1. Intent attributions measured between groups across all four dilemmas.*

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[Table and Figure Description]
Affective Intensity

It was hypothesized that adolescent girls with an eating disorder would experience more intense negative emotions as compared to the nonclinical control group. The emotional experience of each subject was measured by asking the question “How would it make you feel if it happened to you?” They were asked to circle one emotion from a list that would best describe the way they would feel. The list consisted of: sad, relieved, disappointed, annoyed, angry, frustrated, nervous, happy, embarrassed, lonely, scared, or unaffected. Subjects were then asked to circle how strong that feeling would be on a 5-point rating scale (1 = not strong, 5 = extremely). Any emotions that were positive in nature were assigned a numerical value of 1. Scores were summed and averaged across all four vignettes. As predicted, adolescent girls with an eating disorder identified emotions as significantly more intense ($M = 3.24, SD = .66$) than the nonclinical control subjects ($M = 2.75, SD = .98$), $t(107) = -3.13, p = .002, d = -.59$.

Coping

It was hypothesized that adolescent girls with an eating disorder would identify more avoidant coping strategies in response to the social dilemmas. Specifically, it was predicted that the eating disorder group would identify more intrapunitive avoidant coping strategies that are considered self-destructive and nonadaptive. This would further support the belief that specific coping deficits in problem solving are evident within this population that may contribute to feelings of control loss and helplessness. As predicted, adolescent girls with an eating disorder
identified significantly more intrapunitive avoidant strategies \((M = 1.44, SD = 1.34)\) than subjects in the nonclinical control group \((M = .66, SD = .96)\), \(t(107) = -3.52, \ p = .001, \ d = .67\). Overall, the adolescent females with an eating disorder chose significantly more avoidant coping strategies \((M = 2.76, SD = 1.20)\) than did those in the control group \((M = 1.88, SD = 1.1)\), \(t(100.37) = -3.95, \ p = 0.00, \ d = .76\). Finally, the nonclinical control group identified significantly more adaptive approach coping strategies \((M = 2.02; \ SD = 1.11)\) than did the eating disorder group \((M = 1.12; \ SD = 1.15)\), \(t(102.5) = 4.12, \ p = .000, \ d = .80\). Nonadaptive approaches were not significantly identified to constitute comparison and thus not applicable to this study. Table 3 and Figure 2 illustrate the data.

Table 3

ED vs. Nonclinical: Mean Number of Coping Strategies

<table>
<thead>
<tr>
<th>Subjects</th>
<th>Intrapunitive Avoidant</th>
<th>Hedonistic Avoidant</th>
<th>Adaptive Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eating Disorder</td>
<td>1.44*</td>
<td>1.32</td>
<td>1.12**</td>
</tr>
<tr>
<td>Non-Clinical</td>
<td>.66*</td>
<td>1.22</td>
<td>2.02**</td>
</tr>
</tbody>
</table>

\(^* p < .05; \ ** p < .001\)
Likelihood of Directly Questioning the Provocateur

It was hypothesized that adolescent females diagnosed with an eating disorder would be less likely to directly question the provocateur as a means of conflict avoidance. An interesting trend emerged from this data. On the first three social dilemmas, the nonclinical control group was significantly more likely to directly question the provocateur as a social problem-solving strategy ($M = 3.08; SD = .73$) compared to the eating disorder group ($M = 2.75; SD = .94$), $t(107) = 2.11, p = .037$, $d = .39$. On the final dilemma, the eating disorder group was more likely to directly confront the provocateur ($M = 1.98; SD = 1.45$) compared to the nonclinical control group ($M = 1.93; SD = 1.14$). However, these results were not significant $t(107) = -.192, p = .85, d = .04$. Both groups identified that directly questioning the provocateur in this dilemma was not an adaptive strategy ($M = 1.95$). It should be
noted that this final dilemma triggered body image and appearance anxiety, as it reflected a friend only complementing others, while ignoring the subject on their appearance, before being distracted and walking away.

**Social Problem Solving**

It was predicted that adolescent females diagnosed with an eating disorder would perform significantly more poorly on a measure of social problem-solving skills as measured by the SPSI-A. The SPSI--A total score revealed that the control group scored slightly higher \((M = 2.54; SD = .48)\) than the eating disorder group \((M = 2.40; SD = .67)\). However, these results did not indicate a significant difference between the two groups \(t(107) = 1.3, p = .197, d = .24\).

Further analysis of the scales reveals significant differences between the groups that may provide essential information regarding differences in coping. The control group reported higher scores on the Problem Orientation scale \((M = 2.87; SD = .57)\) compared to the eating disorder group \((M = 2.51; SD = .93)\). The difference was significant \((t(107) = 2.41, p = .018, d = .47)\), indicating that adolescent girls with an eating disorder may lack the self-efficacy to successfully solve social problems. More specifically, the control group scored higher on the Emotion subscale \((M = 2.83; SD = .77)\) than did the eating disorder group \((M = 2.31; SD = 1.18)\). The results were significant \((t(107) = 2.75, p = .007, d = .52)\), indicating that adolescent females with an eating disorder experience strong negative emotions associated with solving social problems that may influence their ability to effectively utilize social problem-solving skills. Table 4 displays the scores.
Table 4

**Mean Scores of Eating Disorder and Nonclinical Group on SPSI-A**

<table>
<thead>
<tr>
<th>Scale</th>
<th>Eating Disorder Group</th>
<th>Non-Clinical Group</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SPSI-A Total</strong></td>
<td>2.39</td>
<td>2.54</td>
</tr>
<tr>
<td>Automatic Process Scale</td>
<td>2.62</td>
<td>2.69</td>
</tr>
<tr>
<td>Problem Orientation Scale</td>
<td><strong>2.52</strong>&lt;sup&gt;*&lt;/sup&gt;</td>
<td><strong>2.87</strong>&lt;sup&gt;*&lt;/sup&gt;</td>
</tr>
<tr>
<td><em>Cognitive Subscale</em></td>
<td>2.48</td>
<td>2.73</td>
</tr>
<tr>
<td><em>Emotional Subscale</em></td>
<td><strong>2.31</strong>&lt;sup&gt;*&lt;/sup&gt;</td>
<td><strong>2.83</strong>&lt;sup&gt;*&lt;/sup&gt;</td>
</tr>
<tr>
<td><em>Behavioral Subscale</em></td>
<td>2.77</td>
<td>3.03</td>
</tr>
<tr>
<td>Problem-Solving Skills Scale</td>
<td>2.05</td>
<td>2.06</td>
</tr>
<tr>
<td><em>Problem Identification Subscale</em></td>
<td>1.83</td>
<td>1.79</td>
</tr>
<tr>
<td><em>Alternative Generation Subscale</em></td>
<td>2.0</td>
<td>1.87</td>
</tr>
<tr>
<td><em>Consequence Prediction Subscale</em></td>
<td>2.33</td>
<td>2.39</td>
</tr>
<tr>
<td><em>Implementation Subscale</em></td>
<td>1.76</td>
<td>1.71</td>
</tr>
<tr>
<td><em>Evaluation Subscale</em></td>
<td>2.30</td>
<td>2.37</td>
</tr>
<tr>
<td><em>Reorganization Subscale</em></td>
<td>2.06</td>
<td>2.19</td>
</tr>
</tbody>
</table>

<sup>*</sup><sup>p < .05</sup>

**Interpersonal Assertiveness**

It was hypothesized that adolescent females with an eating disorder would score lower on a measure of interpersonal assertiveness, as measured by the Interpersonal Behavior Survey (IBS). Three protocols were not complete in the
eating disorder group and thus not interpretable, leaving a total of 47 valid protocols.

As predicted, the control group scored higher on the General Assertiveness scale 
\(M = 52.41; SD = 7.2\) compared to the eating disorder group \(M = 47.45; SD = 10.8\). The results were significant \((t(104) = 2.89, p = .006, d = .54.)\) There were significant differences \((p < .05)\) on the Self Confidence scale, Defending Assertiveness scale, Frankness scale, Praise scale, and Requesting Help scale. Results are listed in Table 5.
Table 5

*Mean Scores of Eating Disorder and Nonclinical Group on IBS*

<table>
<thead>
<tr>
<th>Scale</th>
<th>Eating Disorder Group</th>
<th>Nonclinical Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Defensiveness score</td>
<td>50.83</td>
<td>48.14</td>
</tr>
<tr>
<td>Infrequency scale</td>
<td>52.53*</td>
<td>48.85*</td>
</tr>
<tr>
<td>General Aggressiveness</td>
<td>50.57</td>
<td>51.95</td>
</tr>
<tr>
<td>Hostile Stance scale</td>
<td>47.60</td>
<td>50.10</td>
</tr>
<tr>
<td>Expression of Anger scale</td>
<td>49.06</td>
<td>51.59</td>
</tr>
<tr>
<td>Disregard for Rights scale</td>
<td>47.79</td>
<td>48.97</td>
</tr>
<tr>
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<td>Physical Aggressiveness scale</td>
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<td>52.71</td>
</tr>
<tr>
<td>General Assertiveness</td>
<td>47.45*</td>
<td>52.41*</td>
</tr>
<tr>
<td>Self-Confidence scale</td>
<td>47.40*</td>
<td>52.81*</td>
</tr>
<tr>
<td>Initiating Assertiveness scale</td>
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<td>53.90</td>
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<td>Defending Assertiveness scale</td>
<td>48.00*</td>
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<td>Refusing Demands</td>
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* = \( p < .05 \)
Chapter Six: Discussion

Summary of Results

The results of this study provide data that identify differences in how adolescent females diagnosed with an eating disorder experience and approach interpersonal problem solving when compared to a nonclinical control group. As predicted, adolescent females with an eating disorder were significantly more likely to appraise the intent of the provocateur in a social dilemma as hostile, providing evidence that a hostile attributional bias may exist that interferes with effective problem solving. Understanding the automatic cognitive responses to social dilemmas provides important insight into the interpersonal realities of this vulnerable population.

In addition, the eating disorder group identified significantly greater intensity of negative emotions when exposed to the social dilemma. This predicted response adds credence to the theory that disordered eating may reflect a pathological coping mechanism employed to modulate intense negative affect. This was further supported by the data from the Social Problem-Solving Inventory for Adolescents (SPSI--A). The results did not support the overall hypothesis that the eating disorder group would score significantly lower on the SPSI--A compared to the nonclinical control group. However, since the SPSI--A is a comprehensive measure of overall social problem-solving skills, it is important to examine the individual scales to identify differences that may impact social problem solving. The clinical group identified stronger negative emotions associated with solving social problems that impeded their ability to effectively utilize social problem-solving skills. Overall, the clinical group
did not represent the same confidence in their ability to effectively solve social problems.

In response to the social dilemmas, adolescent females diagnosed with an eating disorder were significantly more likely to identify an avoidant coping strategy. This is not a surprising revelation, considering the previous evidence that identifies attributional biases and an overwhelming emotional response to the vignettes. Specifically, the eating disorder group identified significantly more intrapunitive avoidant coping strategies that represent a self-destructive means of coping with distressing events. Further examination of the individual vignettes showed the eating disorder group was significantly less likely to directly question the provocateur in the first three vignettes, in which actively confronting the provocateur represents an adaptive strategy. This further confirms a style of conflict avoidance. More interestingly, they were more likely to approach the provocateur on the final dilemma, which may likely be considered a less adaptive strategy, although the difference was not significant. It should be noted that directly questioning the provocateur does not represent the only adaptive approach coping strategy, but is the most efficient. Confirming ones original attribution was identified through different strategies in this study. For example, using friends to question the provocateur and actively approaching the provocateur with indirect questioning were coded as an adaptive coping strategy. This appeared to serve the dual purpose of allowing the provocateur space and time to provide an explanation and the subject the opportunity to interpret the provocateur's treatment of her. This may reflect more advanced attribution confirmation strategies that protect the individual from appearing desperate.
The final aspect of this study examined interpersonal assertiveness, as measured by the Interpersonal Behavior Survey (IBS). As predicted, adolescent females diagnosed with an eating disorder scored significantly lower on the General Assertiveness scale. In addition, significant results emerged from the following scales. The Self-Confidence scale indicated that the clinical group was less self-assured, and this impacted their ability to assert themselves effectively. The Defending Assertiveness scale indicated that the clinical group endorsed fewer behaviors that reflect standing up for their rights. The Frankness scale indicated that the clinical group was less willing to clearly communicate their true feelings and opinions when their opinions may have been unpopular or caused confrontation with others. The Praise scale indicated that the clinical group was less comfortable with giving and receiving praise. Finally, the Refusing Demands scale indicated that the clinical group was less likely to say no to unreasonable or inconvenient demands from others.

This data supports previous research on adult women with eating disorders and presents important evidence regarding social problem-solving skill deficits within an adolescent population. It is assumed that one’s ability to be assertive is highly correlated with a prediction that the behavior will yield a positive result. Consequently, it is hypothesized that a hostile attributional bias negatively impacts assertiveness, as a negative outcome is associated with assertive behavior. As a result of this data, a cyclical relationship between attributions and assertiveness may be proposed.
Significance of Results

Cognitive Processing Biases

Accepted theories regarding the development and maintenance of eating disorders suggest that the problem with eating is secondary and represents a pathological coping mechanism associated with more fundamental psychological difficulties (Dalgleish et al., 2001; Leung et al., 1999; Vitousek, 1996). This data suggests that adolescent females diagnosed with an eating disorder may approach interpersonal relationships with underlying cognitive processing biases that influence problem solving and coping.

Understanding cognitive distortions offers insight into the limitation of available coping responses. A substantial amount of data supports the links between attributions made and subsequent behavioral choices (e.g., Crick & Dodge, 1996, 1994; Crick et al., 2002; Crick, 1996). Specifically, the hostile intent attributions of aggressive boys have been shown to limit the generation of responses and influence aggression (Crick & Dodge, 1994). In step 5 of the social information processing model, it is hypothesized that children evaluate the available responses and select the one that will provide the most favorable outcome. If an individual views the potential outcome as negative, he/she will likely dismiss the response.

Attributing hostile intent within relational provocation situations may lead to maladaptive coping strategies. The consequences to this are significant, as internal attributions made regarding negative events never become disconfirmed, impacting one's self-image and control within relationships. These findings are important, as they bring attention to the existence of a hostile attributional bias as a potential
cognitive processing deficit that may be influential in the development and/or maintenance of eating disorders or a consequence of disordered eating. If disordered eating is indeed a dysfunctional means of coping and represents an attempt to regain control, examining and developing these skill deficits will be essential for effective treatment.

Cognitive processing biases can be viewed as greater symptoms of underlying psychological difficulties that have arisen from core relational experiences. Baldwin (1992) conceptualized a model of relational schemas and applied it to the processing of social information. Baldwin drew from the shared insights of cognitive theorists, agreeing that people develop cognitive maps, or interpersonal scripts, based on personal experiences. People then utilize those scripts to interpret social situations and the behavior of others. This is very functional and adaptive, allowing people to use past experiences as a means of learning how to behave and minimize potential harm. However, as cognitive-behavioral theory posits, perceptual disturbance and psychological difficulties are perpetually linked. Schemas that may be adaptive and protect one from physical or psychological harm in specific environments are considered maladaptive when inappropriately applied within an environment that does not present a true threat. The existence of hostile attributional biases may reveal core relational maladaptive schemas that predict avoidant coping strategies and feelings of control loss. One may have the skills to identify alternative means of handling social problems; however, if the alternative strategies are quickly dismissed due to the prediction of a negative outcome, those skills become, in effect, obsolete.
Affect Regulation

The current data suggest that when faced with interpersonal dilemmas, adolescent females experience a significantly greater intensity of negative emotions. It is presumed that this intensity is associated with attributions made; nonetheless, it is clear that this emotional experience may overwhelm one’s ability to effectively cope with problems. Previous research on adult women confirms similar findings and suggests that disordered eating represents a destructive means of coping with distressing affect (Kitsantas et al., 2003). Given the overwhelming evidence, it is imperative to recognize the mediating factors that influence this emotional experience and the development of more adaptive skills. If a function of disordered eating is to maintain emotional equilibrium, then the logical intervention would be to replace the maladaptive coping response with more adaptive strategies.

Avoidant Coping Strategies

Active coping strategies, such as problem-focused approaches and social support seeking, have been associated with lower levels of depression and anxiety (Kendler, et al., 1991). Avoidance coping, however, has been associated with increased stress (Troop et al., 1994). This study identified significant differences in coping with social dilemmas that exist between adolescents with and without eating disorders. The most significant finding identified the reliance on intrapunitive avoidant coping strategies to cope with negative emotions the social dilemma generated. Adolescent females diagnosed with an eating disorder reported they were
significantly more likely to use a self-destructive means of coping. These avoidant strategies included disordered eating, emotion-focused strategies, self-abuse, and not coping. The strategies were entirely associated with hostile intent, were considered nonadaptive, and failed to confirm or disconfirm the respondent’s original attribution.

These results are significant, as this style of coping likely distorts the individual’s reality, reinforcing a negative self-image that is synonymous with eating disorder pathology. Furthermore, these results lend support to an active treatment approach that challenges habitual responses to social events and encourages alternative coping strategies. Through passive and avoidant coping strategies, one’s interpersonal reality remains constant, and internal attributions of negative events are unchallenged. Regardless of the existence of advanced cognitive skills that recognize alternative means of problem solving, one must actively engage in alternative strategies to provide evidence that contradicts strongly held convictions that negative outcomes are inevitable. Deficits in interpersonal assertiveness identified within this study represent the avoidant coping style within this vulnerable population (Ball & Lee, 2000).

A Social Information-Processing Model for Disordered Eating

Crick and Dodge’s (1994) reformulated social information processing model provides empirical support and a theoretical framework for understanding how the cognitive response to social cues impacts the problem-solving and solution implementation process. Social information processing models are rooted in theories constructed by both social and cognitive psychologists, with a common goal of understanding variations in social behavior. This model has provided significant
advances in the understanding of children’s social adjustment, and the possible application across clinical populations is immense. This study is the first attempt to utilize this model as a framework to identify unique cognitive, affective, and behavioral responses in social problem solving within an adolescent eating disorder population.

Crick and Dodge’s reformulated social information processing model attempts to assimilate all previous research on cognitive processing and social maladjustment to understand and predict behavioral responses. The evidence from this study can be used to support a social information processing model that explains the development and/or maintenance of disordered eating. It is understood that significant variables deeply rooted within biological, psychological, and social elements contribute to these potentially fatal disorders. The intentions of this model are not to minimize or disregard those important elements. Rather, it is used to provide a framework that reflects the intricacies of social problem solving, psychological distress, and coping. It is a model that can be rooted in empirical support, while providing a clinically relevant understanding of one’s social interactions. This is particularly relevant within an adolescent population, where social competence is magnified. The following paragraphs outline how the current research is applicable to understanding disordered eating as a maladaptive coping mechanism, utilizing Crick and Dodge’s (1994) reformulated social information processing model.

In step 1 and 2 of the SIP model, Crick and Dodge (1994) hypothesized that when faced with social dilemmas, children focus on particular social cues, encode those cues, and interpret them. It is believed that relevant historical information is
accessed from memory to guide the interpretation of the present event. This allows
the individual to use core relational schemas to process information efficiently and
provide the most effective strategy that maintains both physical and psychological
safety. However, the reliance on past experiences as the sole predictor of future
events can allow an individual to disregard important social cues, distort other social
cues, and may lead to inappropriate social responses.

This study was specifically designed to create a social dilemma that allowed
each subject to interpret the causality of the present event. The ambiguity of the
dilemma allowed for each subject to make their own assumptions of causality, based
on their interpretation of specific social cues. Causal attributions are believed to aid in
the development of subsequent social responses. It was clear that adolescent females
diagnosed with an eating disorder were more likely to attribute hostile intent than was
a nonclinical control group. This is significant because it reflects the use of relational
schemas that predict threat and influence the distortion of social cues. From this
perspective, avoidant coping strategies are then utilized as a defense against predicted
rejection or psychological harm.

Step 3 of the SIP model suggests that children then formulate a goal, based on
the interpretation of the social event. Crick and Dodge (1994) suggests that goals may
include both internal (feeling happy, avoiding embarrassment, and regulating
negative affect) and external (getting invited to the party) states or outcomes.
Therefore, the formulation of goals is entirely based on the individual’s subjective
interpretation of the event. For example, the belief that “I did not receive an invitation
to the party because I am not wanted at the party” may yield different goals than if the
belief is “the invitation has yet to arrive” or “we are such close friends it is assumed I am invited.” It is believed that a hostile intent attribution may influence goal formulation from that of attribution confirmation to harm avoidance. The present study confirmed that adolescent females diagnosed with an eating disorder experienced intense negative emotions in response to the social dilemma. These negative emotions appear to impact their ability to effectively cope with and solve social problems, as indicated by the SPSI--A data. The use of strategies to regulate that emotional response may be instrumental in understanding the function of disordered eating.

Step 4 of the SIP model suggests that children access behavioral responses from long-term memory. Past experiences are used as a cognitive map to help navigate the individual toward social competence. However, the behavioral responses generated from memory will be based upon the subjective interpretation of current social cues. Therefore, if the interpretation of the current dilemma is not congruent with the reality of the situation, maladaptive strategies may be constructed. It is hypothesized that behavioral responses are generated from past experiences, with the goal of achieving a desired outcome. Therefore, if the internal attributions are made for negative events or hostile intent is attributed to the provocateur, avoidant strategies may be viewed as the most adaptive. Unfortunately, avoidant strategies often fail to confirm original attributions, may lead to a sense of powerlessness, and influence the development of destructive coping mechanisms to maintain control. Based on the data from this study, adolescent females diagnosed with an eating
disorder are more likely to generate avoidant coping strategies as a means of avoiding future psychological distress.

The final step of the SIP model suggests that children select a behavioral response from their generated alternatives that they believe most likely achieves their desired outcome. In this study, adolescent females diagnosed with an eating disorder were significantly more likely to choose an avoidant strategy. This assumes that a more active or assertive approach that seeks to confirm their original attribution is associated with a negative outcome. This prediction may be based on past experiences of rejection or psychological trauma that now influence a hypervigilance to threat-related cues. This study suggests that adolescent females diagnosed with an eating disorder are more likely to rely on intrapunitive avoidant strategies that represent self-destructive means of coping with distressing events. This may suggest that disordered eating is a self-destructive strategy used to regulate intense affect, maintain personal control, and achieve desired outcomes. If adolescent females with an eating disorder overevaluate body shape and weight in achieving social competence, it is conceivable that disordered eating may also represent attempts to achieve social power through achieving the ideal body image.

This model reflects evidence obtained from the study that suggests disordered eating may function as an intrapunitive avoidant coping strategy maintained by a hostile attributional bias that limits the identification, selection, and implementation of more adaptive coping strategies. This cyclical relationship has lasting consequences in maintaining the negative self-image that fuels disordered eating. The clinical applications of this model are vast, from both preventative and
treatment perspectives, in identifying specific variables that may influence or maintain disordered eating.

_Eating Disorders in Adolescence: A Call for Research_

The Society for Adolescent Medicine has published a position paper on eating disorders in adolescents recommending that psychological interventions for eating disorders include the mastery of the developmental tasks of adolescence (Kreipe et al., 1995). Researchers have voiced concern that existing empirically supported treatment interventions do not sufficiently take into account specific adolescent developmental variables (e.g., Gowers & Bryant-Waugh, 2004; Holmbeck et al., 2000; Holmbeck & Updegrove, 1995; Weisz & Hawley, 2002). This disparity is conspicuously evident within the eating disorder literature (Keel & Haedt, 2008), especially considering the developmental trajectory of the symptoms. With this in mind, it is imperative for clinicians and researchers to identify specific developmental variables that distinguish differences among clinical populations, in an effort to advance more effective treatment protocols for adolescents.

This study represents the call for research acknowledging the importance of specific developmental variables and utilizing developmentally appropriate treatment interventions. The obstacle of increasing motivation to change is one that is well documented within the eating disorder literature. If the theory is that eating disorders represent a coping mechanism for underlying psychological disturbance is supported, it is logical to assume that interventions can be tailored to address those underlying difficulties. This research suggests that interventions tailored to address social
competence through skill development may have the secondary effect of disrupting
the destructive cycle that maintains disordered eating. More importantly, addressing
the social issues that are of heightened importance during adolescence may increase
treatment motivation. Nevertheless, this study begins to address the apparent gap in
the literature on adolescent females diagnosed with and eating disorder.

Expanding the Cognitive Behavioral Literature

Cognitive behavioral treatments are rooted in the philosophy of evidence-
based clinical practice. Cognitive behavioral treatment stresses the cultivation of
skills that enable a patient to become their own therapist through, an active model that
emphasizes coping. It would be redundant to further discuss the connection between
this research and cognitive-behavioral therapy, as the foundation of this project is
firmly planted in the core ideals of evidence-based practice through further
exploration of cognitive and behavior skill deficits as it applies to the field of eating
disorders. This project has developed from the extensive cognitive-behavioral
literature that identifies cognitive and behavioral skill deficits as instrumental in the
development and maintenance of psychological disturbance. This research expands
the current literature that emphasizes the role of cognitive processing biases and
coping skill deficits in core psychological disturbance. Specifically, it supports a
social information processing model applied to the field of eating disorders. This is
the first attempt at applying this model to better understand the function of disordered
eating. Finally, it reflects the desire in the field to individualize current evidence-
based treatment protocols, as the focus of this study was to investigate social problem solving in an adolescent clinical population.

Study Limitations

The Social Dilemma Survey (SDS) that was designed for this study is new. The SDS was constructed based on the previous use of ambiguous social vignettes designed to identify social information processing mechanisms in children. However, the validity of this instrument as a true measure of social information processing mechanisms is not established. The vignettes were developed through interviews with adolescent girls and scrutinized by the research team to maintain ambiguity. The range of responses appears to suggest the measure does indeed maintain its ambiguity; however, it is possible that inadequacies in the content confounded results. For example, the responses reflected initial reactions to the dilemma and may not reflect overall social problem-solving skills, as the individual may change their original attribution or coping approach as further deliberation ensues. In addition, the complexities of social dilemmas vary significantly, and these four dilemmas may not accurately assess one's overall approach to social problem solving. Adaptive coping responses vary depending upon the nature of the dilemma. The final dilemma in this study likely did not effectively measure an approach coping mechanism as the most adaptive response. Therefore, a hedonistic avoidant coping approach likely presents as the most adaptive. However, this does not detract from the significance of the results, as differences in coping were apparent across the first three dilemmas, and the clinical group was more likely to directly question the provocateur on the final
dilemma, when it was the least adaptive approach. The final dilemma appears to successfully measure intent attributions and affective intensity.

The second issue that arose from the use of this measure was that of interrater reliability. The open-ended questions required the coding of intent attributions and coping responses. These results are reflective of the coding of only one individual. It is possible that interpretations vary regarding the coding of specific responses and thus appropriately challenge the validity of these results. However, a strict criterion was developed to ensure differences among the coding variables, and the identification of two separate avoidant coping strategies arose from the discrepancies observed in the data. This appears to have added clinically relevant information regarding the coping strategies of adolescent girls with an eating disorder. It should be noted that independent raters have been recruited to code the data in order to address this issue prior to publication.

This research study also calls into question the existence of differences among eating disorder diagnoses. There are inherent concerns with the label of an "Eating Disordered Group," as it fails to recognize the independent biological, psychological, and social variables that differentiate anorexia, bulimia, and eating disorder NOS. There is a risk of overgeneralizing the results to all adolescent females diagnosed with an eating disorder. The sample size was overrepresented by adolescent females diagnosed with anorexia nervosa. Only 11 of the subjects met clinical criteria for bulimia nervosa, and 9 subjects had a diagnosis of EDNOS. Differences between diagnoses were not evaluated, as the validity of the diagnoses has not been established. Diagnoses were reported by the subject only and reflect the diagnosis
made only upon the initial admission into the program. However, the current course of treatment ranged from 0 to 60 months, and the likelihood that the subject did not retain the clinical criteria for the initial diagnosis is great. In addition, comorbid diagnoses were not assessed, and the current data cannot differentiate whether results reflect the impact of multiple presenting problems.

There has been a growing sentiment in the field that existing diagnostic labels are of limited utility to the clinician (Waller et al., 2007). Evidence suggests that the largest single diagnostic group has become EDNOS, and patients with eating disorders do not remain in the same diagnostic group over time (Fairburn & Harrison, 2003). In response to this evidence, various suggestions have been made. One response has been to develop more complex diagnostic schemes (Norring & Palmer, 2005). An alternative approach has been to identify universal cognitive content that is common to behaviors across eating disorders (Waller, 1993). This represents the belief that there is common core pathology among patients with an eating disorder, despite the wide range of disturbed eating patterns. The “transdiagnostic” CBT model of eating disorders (Fairburn et al., 2003) represents a formal approach to treatment recognizing universal cognitive deficits and the use of food to reestablish perceived control in the context of poor self-image. This premise reflects the foundation of this research study and minimizes the importance of initial diagnosis.

In addition, the range of treatment lengths creates questions regarding the impact of treatment upon social problem-solving skills. The limitation of this study fails to assess the impact treatment has on the measured variables in this study. It is possible that deficits in information processing and problem solving may be greater
than measured in this study and not truly reflected due to the treatment effect. Do the subjects who have been in treatment the longest reflect the most chronic and severe of cases, and thus skew the results of the study? We know little about the severity of the disorder among the subjects in this study, as subjects varied among type of treatment received. Comorbid diagnoses have not been identified, thus the impact of comorbid disorders may reflect the variability measured. This study is unable to assert that the deficits measured in social problem solving are a direct result of the eating disorder.

There are also inherent concerns regarding self-report data. It has been noted that subjects tend to report what they believe the researcher expects to see and what reflects positively on their own ability, knowledge, beliefs, and opinions (Cook & Campbell, 1979). In addition, reflecting back on past behavior calls into question the reliability of the subject's memory/perceptions (Schacter, 1999). The Social Problem-Solving Inventory for Adolescents (SPSI-A) and Interpersonal Behavior Survey (IBS) required subjects to reflect on past behaviors, and the reliability of such data can be tenuous. However, the Social Dilemma Survey (SDS) was developed to allow the subject to imagine if the dilemma was happening to them. Open-ended questions assessing attributions and coping styles eliminated a priming effect and increased the likelihood that their responses reflected their genuine experience.

Subjects were provided with an identification number and did not report their names on any of the data, to protect their anonymity. However, the nonclinical control group was required to complete the EAT--26 to screen for eating disorder symptomatology. Subjects were informed that if they scored above a cutoff score of 20, their parents would be notified and a referral would be made to a local therapist.
who specializes in the assessment and treatment of eating disorders. This undoubtedly could have impacted the validity of those scores, as subjects feared the consequences of honest reporting.

Additional threats to external validity should also be noted. This study primarily reflects the experiences of White females in the northeastern United States. It does not take into account cultural variability and should be carefully considered when generalizing to other adolescent females diagnosed with an eating disorder.

**Future Directions**

In future research, more complex designs are needed to assess the impact of social information processing and problem solving skills deficits on the development and maintenance of disordered eating. Designs that reflect causality between symptom severity and degree of skill deficits should be explored. Do hostile intent attributions reflect universal cognitive processing deficits that increase one’s risk for the development of eating and other disorders? In addition, does attributing hostile intent influence avoidant coping strategies, specifically intrapunitive strategies that reflect a self-destructive means of coping? This would represent differences among the development of disorders, as attributing hostile intent in relationships has also been shown to influence aggressive responses and social maladjustment in boys (Crick & Dodge, 1994). Future studies can further explore the association between cognitive processing deficits and subsequent behavioral choices among disorders. With that in mind, the development of valid and reliable measures of social information processes should be developed.
Furthermore, do differences exist amongst eating disorder diagnoses on all measured variables? Future research should address the question of a transdiagnostic approach to the treatment of disordered eating. A social information processing model is a comprehensive examination of the social problem-solving process and has implications to further support a functional analytic approach (Slade, 1982) to the eating disorders. What differences exist between the diagnoses in the way individuals process their social environment? What conclusions are made and how do they influence subsequent coping responses? Does this indeed influence perceived control? Could changes in coping then influence cognitive restructuring?

Furthermore, research should expand beyond simply examining differences between disorders and examine cultural differences, as well. Future research could replicate this study across groups that would include adults, younger children, and males.

Research designs that incorporate the development of social problem-solving skills can assess the impact of coping skills development on symptom reduction. Examining the interpersonal reality of adolescents may be an important avenue for treatment designs that address skill deficits and focus on interventions that improve coping. Future research should identify developmental differences that exist between adolescent and adult populations, with the goal of individualizing treatment. The implications are great for this model and future models that address the implication of coping deficits on the development of psychopathology.

There is also a risk of undervaluing the role emotion plays in problem solving. There was clear evidence from this study that suggests adolescent females diagnosed with an eating disorder experience more intense negative emotions in
response to social problem solving, and their emotional response interferes with effective problem solving. Future research could examine the impact of behavior skills that assist in emotional regulation and its subsequent impact on problem solving and coping.

Finally, the greater task may be to understand the development of cognitive processing biases. Are these identified processing biases and coping deficits a reflection of complex traumatic stress and representative of a developmentally adaptive means of maintaining physical and psychological safety? Are the two inherently linked? If this is indeed the case, how can the current evidence-based treatment of traumatic stress impact subsequent social problem solving? What is the impact of social learning, specifically one’s family environment? Is the development of new experiences through behavioral experiments enough to create cognitive dissonance that effectively initiates restructuring? Results from this study raise numerous questions and reflect the need for further investigation of factors that contribute to the development and maintenance of eating disorders.
References


Williams, C. J., Power, K. G., Millar, H. R., Freeman, C. P., Yellowlees, A.,
Dowds, T. et al. (1993). Comparison of eating disorders and other
dietary/weight groups on measures of perceived control, assertiveness, self-
esteem, and self directed hostility. *International Journal of Eating
Disorders, 14, 27-32.*

Williams, C. J., Power, K. G., Millar, H. R., Freeman, C.P., Yellowlees, A.,

and self-monitoring as dimensions of control: Women with bulimia nervosa

eating disorders: Implications for theory and treatment. *Behavior
Modification, 23, 556-577.*

Cognitive-behavioral therapy for bulimia nervosa: Time course and
mechanisms of change. *Journal of Consulting and Clinical Psychology, 70,
267-274.*

Nathan & J. M. Gorman, *A guide to treatments that work* (2nd ed. pp. 559-

with bulimia nervosa. *European Eating Disorders Review, 14, 8-16.*


Appendices

Appendix A: Consent Form (Control)
Appendix B: Consent Form (Clinical)
Appendix C: Demographic Questionnaire (Control)
Appendix D: Demographic Questionnaire (Clinical)
Appendix E: Eating Attitudes Test--26 (EAT--26)
Appendix F: Social Dilemma Survey (SDS)
Appendix G: Social Problem-Solving Survey for Adolescents (SPSI--A)
Appendix H: Interpersonal Behavior Survey- Short Form (IBS)
Appendix I: Final Defense Power Point Slides
PARENTAL PERMISSION FOR RESEARCH
Penn State College of Medicine
The Milton S. Hershey Medical Center

Title of Project: The Problem-Solving Approach of Adolescent Girls Diagnosed with an Eating Disorder: Toward a Greater Understanding of Control

Principal Investigator: Dr. Richard L. Levine
Other Investigators: Roger McFillin, MS, MEd; Stacey Cahn, PhD; Susan E. Lane-Loney, PhD; Virginia Salzer, PhD; Martha P. Levine, MD; Margaret H. Peaslee, PhD

Participant's Printed Name: ________________________________

This is a research study. Research studies include only people who want to take part. This form gives you information about this research, which will be discussed with you. It may contain words or procedures that you don't understand. Please ask questions about anything that is unclear to you. Discuss it with your family and friends and take your time to make your decision.

1. **Purpose of the Research:**

The purpose of this research study is to investigate the psychological processes of adolescents with eating disorders being treated at Hershey Medical Center (HMC). Your child is being offered the opportunity to take part in this research because of her diagnosis with Anorexia Nervosa (AN), Bulimia Nervosa (BN), or Eating Disorder not otherwise specified (EDNOS). There will be approximately 59 participants enrolled in this research.

2. **Procedures to be Followed:**

If your child is eligible for this study and agrees to participate, she will complete three questionnaires: the Social Dilemma Survey (SDS), the Social Problem-Solving Inventory for Adolescents (SPSI-A), and the Interpersonal Behavior Survey (IBS).

We will copy information from your child's medical record: date of birth, grade, race/ethnicity, diagnosis, and age treatment was begun.

3. **Discomfort and Risks:**
CONTROL PARTICIPANTS

Eligible participants will complete three surveys: the Social Dilemma Survey (SDS), the Social Problem-Solving Inventory for Adolescents (SPSI-A), and the Interpersonal Behavior Survey (IBS).

3. **Discomfort and Risks:**

Your child's risks in participating in this study are the loss of privacy involved and the potential for disclosure of confidential information beyond the investigators of the study.

4. a. **Possible Benefits to Your Child:**

Your child will not benefit from taking part in this research study.

   b. **Possible Benefits to Society:**

The potential benefit to society is an understanding which may improve treatment/therapy of others with eating disorders.

5. **Other Options That Could be Used Instead of this Research:**

Your child does not have to take part in this research study.

6. **Time Duration of the Procedures and Study:**

The time required to complete the questionnaires should be approximately 60 minutes.

7. **Statement of Confidentiality:**

Your child's records that are used in the research at The Milton S. Hershey Medical Center (HMC) and Penn State College of Medicine (PSU) will include name, age in years and months, height, weight, and Body Mass Index (BMI) and be kept in a secured area in Roger McFillin's office. The list that matches your child's name with the code number will be kept in a locked file in Dr. Levine's office.

In the event of any publication or presentation resulting from the research, no personally identifiable information will be shared.

We will keep your child's participation in this research study confidential to the extent permitted by law. However, it is possible that other people may become aware of your child's participation in this study. For example, the following people/groups may inspect and copy records pertaining to this research.

- The Office of Human Research Protections in the U. S. Department of Health and Human Services
- The HMC/PSU Institutional Review Board (a committee that reviews and approves research studies) and
- The HMC/PSU Human Subjects Protection Office

Some of these records could contain information that personally identifies your child. Reasonable efforts will be made to keep the personal information in your child's
8. **Costs for Participation:**

There will be no cost to your child for her participation in this study. You will not lose any legal rights by signing this form.

9. **Compensation for Participation:**

Your child will not receive any compensation for being in this research study.

10. **Research Funding:**

The institution and investigators are not receiving any funding to support this research study.

11. **Voluntary Participation:**

Taking part in this research study is voluntary. If your child chooses to take part in this research, her major responsibilities will include completing a demographic questionnaire plus three standardized surveys. Your child does not have to participate in this research. If your child chooses to take part, she has the right to stop at any time. If your child decides not to participate or if your child decides to stop taking part in the research at a later date, there will be no penalty or loss of benefits to which your child is entitled. In other words, if your child's decides not to participate in this research or to stop taking part in the research, there will be no penalty to your child and it will not affect school grades.

12. **Contact Information for Questions or Concerns:**

You have the right to ask any questions you may have about this research. If you have questions, complaints or concerns or believe your child has been harmed related to this research, contact Dr. Levine at 717-531-8006.

If you have questions regarding your child's rights as a research participant, or you have concerns or general questions about the research, contact the research protection advocate in the HMC Human Subjects Protection Office at 717-531-5687. You may also call this number if you cannot reach the research team or wish to talk to someone else.

For more information about participation in a research study and about the Institutional Review Board (IRB), a group of people who review the research to protect your rights, please visit the HMC IRB’s Web site at [http://www.hmc.psu.edu/irb](http://www.hmc.psu.edu/irb). Included on this website, under the heading “Participant Info”, you can access federal regulations and information about the protection of human research participants. If you do not have access to the internet, copies of these federal regulations are available by calling the HSPO at (717) 531-5687.
Signature and Permission to Enroll in the Research

Before making the decision regarding enrollment in this research you should have:
- Discussed this study with an investigator
- Reviewed the information in this form and
- Had the opportunity to ask any questions you may have.

Your signature below means that you have received this information, have asked the questions you currently have about the research and those questions have been answered. You will receive a copy of the signed and dated form to keep for future reference.

Parent/Guardian: By signing this consent form, you indicate that you give permission for your child to take part in this research study.

Signature of Parent or Guardian          Date          Time          Printed Name

Person Explaining the Research: Your signature below means that you have explained the research to the parent/guardian and have answered any questions he/she has about the research.

Signature of person who explained this research         Date         Time         Printed Name
(Only approved investigators for this research may explain the research and obtain informed consent.)

MINOR'S ASSENT FOR RESEARCH

The research study has been explained to you. You have had a chance to ask questions to help you understand what will happen in this research.

If the results of your questionnaire indicate that you may have an eating disorder the information will be shared with you and your parent/guardian.

You Do Not have to be in the research study. If you agree to participate and later change your mind, you can tell the researchers, and the research will be stopped.

You have decided:   (Initial one)       To take part in the research.

                                        NOT to take part in the research.

Child's Signature          Date          Printed Name
Person Explaining the Research: Your signature indicates that you have carefully explained the purpose and nature of this research to ________________ in age-appropriate language. She has had an opportunity to discuss it with you. You have answered all her questions and she provided her own decision about participating in this research.

__________________________________________  __________________________
Signature of Person who explained the Research   Date   Printed Name
(Only approved investigators for this research may explain the research and obtain informed assent.)
Appendix B: Consent Form (Clinical)

IRB Protocol No.: 28094EP
Date: 04/02/2008
CONTROL PARTICIPANTS

PARENTAL PERMISSION FOR RESEARCH
Penn State College of Medicine
The Milton S. Hershey Medical Center

Title of Project: The Problem-Solving Approach of Adolescent Girls Diagnosed with an Eating Disorder: Toward a Greater Understanding of Control

Principal Investigator: Dr. Richard L. Levine

Other Investigators: Roger McFillin, MS, MEd; Stacey Cahn, PhD; Susan E. Lane-Loney, PhD; Virginia Salzer, PhD; Martha P. Levine, MD; Margaret H. Peaslee, PhD

Participant's Printed Name: ____________________

This is a research study. Research studies include only people who want to take part. This form gives you information about this research, which will be discussed with you. It may contain words or procedures that you don't understand. Please ask questions about anything that is unclear to you. Discuss it with your family and friends and take your time to make your decision. If you have any questions about the research study, please call Roger McFillin at 610-417-4966.

1. Purpose of the Research:

The purpose of this research study to help investigate the psychological processes of adolescents with eating disorders being treated at Hershey Medical Center (HMC). Your child is being offered the opportunity to take part in this research as an adolescent without an eating disorder. There will be 59 similar adolescents enrolled in this research.

2. Procedures to be Followed:

If your child is eligible for this study and agrees to participate, she will complete a questionnaire about her age, grade, and race/ethnicity and a preliminary questionnaire, the Eating Attitude Test -26, to rule out any eating disorder symptomatology. Anyone that scores at or above the cutoff of 20 or who answers affirmatively to designated questions on the test which are indicative of a potential eating disorder will be excluded from the study. You and your child will be notified and given a referral to a local mental health professional that specializes in the diagnosis and treatment of eating disorders.
Your child's risks in participating in this study are the loss of privacy involved and the potential for disclosure of confidential information beyond the investigators of the study.

4. a. Possible Benefits to Your Child:

Your child will not benefit from taking part in this research study.

b. Possible Benefits to Society:

There may be better understanding which may improve treatment/therapy of others with eating disorders.

5. Other Options That Could be Used Instead of this Research:

Your child does not have to take part in this research study.

6. Time Duration of the Procedures and Study:

The time required to complete the questionnaires should be approximately 60 minutes.

7. Statement of Confidentiality:

a. Privacy and confidentiality measures

Your child's records that are used in the research at The Milton S. Hershey Medical Center (HMC) and Penn State College of Medicine (PSU) will include code number, name, date of birth, and diagnosis and be kept in a secured area in Dr. Richard Levine's office, Birlarcrest HP15.

The list that matches your child's name with the code number will be kept in a locked file in Dr. Richard Levine's office.

In the event of any publication or presentation resulting from the research, no personally identifiable information will be shared.

b. The use of private health information:

If you give your permission, health information about your child will be collected for this research. Health information is protected by law as explained in the HMC Privacy Notice. If you have not received this notice, please request a copy from the researcher.

At HMC/PSU your child's information will only be used or shared as explained in this consent form or when required by law. However, some of the other people/groups who receive your child's health information may not be required by Federal privacy laws to protect his/her information and may share it without your permission.

If you do not want us to use your child's protected health information, your child may not participate in this research.
Your permission for the use, storage, and sharing of your child's identifiable health information will be kept for 7 years. At that time the research information will be destroyed. Any research information in your child's medical record will be kept indefinitely.

If you choose to permit your child to participate, you are free to withdraw your permission for the use and sharing of your child's health at any time. You must do this in writing. Write to Dr. Richard Levine and let him know that you are withdrawing your child from the research study. His mailing address is Box H085, 500 University Drive, Hershey, PA 17033.

If you withdraw your permission:
- We will no longer use or share medical information about your child for this research study, except when the law allows us to do so.
- We are unable to take back anything we have already done or any information we have already shared with your permission.
- We may continue using and sharing the information obtained prior to your withdrawal if it is necessary for the soundness of the overall research.
- We will keep our records of the care that we provided to your child as long as the law requires.

The research team may use the following sources of health information:
- Questionnaires (SDS, SPSI-A, IBS) completed by your child
- Information from your child's medical record related to her eating disorder.

Representatives of the following people/groups within HMC/PSU may use your child’s health information and share it with other specific groups in connection with this research study:
- The principal investigator, Dr. Richard Levine
- The HMC/PSU Institutional Review Board
- The HMC/PSU Human Subjects Protection Office

The above people/groups may share your child’s health information with the following people/groups outside HMC/PSU for their use in connection with this research study. These groups, while monitoring the research study, may also review and/or copy your child’s original PSU/HMC records.
- The Office of Human Research Protections in the U. S. Department of Health and Human Services
- Co-investigators from the Pennsylvania College of Osteopathic Medicine: Roger McFillin, Virginia Salzer, and Stacey Cann.

8. Costs for Participation:

There will be no cost to your child for participation in this study. You will not lose any legal rights by signing this form.
9. **Compensation for Participation:**

Your child will not receive any compensation for being in this research study.

10. **Research Funding:**

The institution and investigators are not receiving any funding to support this research study.

11. **Voluntary Participation:**

Taking part in this research study is voluntary. If your child chooses to take part in this research, her major responsibilities will include completing three standardized questionnaires. Your child does not have to participate in this research. If your child chooses to take part, she has the right to stop at any time. If your child decides not to participate or if your child decides to stop taking part in the research at a later date, there will be no penalty or loss of benefits to which your child is entitled. In other words, if your child decides not to participate in this research or to stop taking part in the research, there will be no penalty to your child and no loss of any benefits.

12. **Contact Information for Questions or Concerns:**

You have the right to ask any questions you may have about this research. If you have questions, complaints or concerns or believe your child may have been harmed related to this research, contact Dr. Richard Levine at 717-531-8006.

If you have questions regarding your child’s rights as a research participant, or you have concerns or general questions about the research, or about your child’s privacy and the use of his/her personal health information, contact the research protection advocate in the HMC Human Subjects Protection Office at 717-531-5687. You may also call this number if you cannot reach the research team or wish to talk to someone else.

For more information about participation in a research study and about the Institutional Review Board (IRB), a group of people who review the research to protect your rights, please visit the HMC IRB’s Web site at http://www.hmc-psu.edu/irb. Included on this web site, under the heading “Participant Info”, you can access federal regulations and information about the protection of human research participants. If you do not have access to the internet, copies of these federal regulations are available by calling the HSPO at (717) 531-5687.

**Signature and Permission to Enroll in the Research**

Before making the decision regarding enrollment in this research you should have:

- Discussed this study with an investigator
- Reviewed the information in this form and
- Had the opportunity to ask any questions you may have.
Your signature below means that you have received this information, have asked the questions you currently have about the research and those questions have been answered. You will receive a copy of the signed and dated form to keep for future reference.

**Parent/Guardian:** By signing this consent form, you indicate that you give permission for your child to take part in this research study.

Signature of Parent or Guardian Date Time Printed Name

**Person Explaining the Research:** Your signature below means that you have explained the research to the parent/guardian and have answered any questions he/she has about the research.

Signature of person who explained this research Date Time Printed Name
(Only approved investigators for this research may explain the research and obtain informed consent.)

**MINOR'S ASSENT FOR RESEARCH**

The research study has been explained to you. You have had a chance to ask questions to help you understand what will happen in this research.

You **Do Not** have to be in the research study. If you agree to participate and later change your mind, you can tell the researchers, and the research will be stopped.

You have decided: (Initial one) ______ To take part in the research.

________ NOT to take part in the research.

Minor's Signature Date Printed Name

**Person Explaining the Research:** Your signature indicates that you have carefully explained the purpose and nature of this research to ________ in age-appropriate language. She has had an opportunity to discuss it with you. You have answered all her questions and she provided her own decision about participating in this research.

Signature of Person who explained the Research Date Printed Name
(Only approved investigators for this research may explain the research and obtain informed assent.)
Appendix C: Demographic Questionnaire (Control)

Demographic Questionnaire

ID #__________ Date__________

Age: Years_________ Months_________

Grade_______

Please Circle your Race/Ethnicity:

1) Black/African American
2) White
3) Hispanic/Latino
4) Native Hawaiian/Pacific Islander
5) American Indian
6) Other (Please Indicate)_________________________

Are you currently undergoing treatment for a major medical or mental health issue? If so indicate below:
Appendix D: Demographic Questionnaire (Clinical)

Demographic Questionnaire

ID #__________ Date__________

Age: Years______ Months_____

Grade_____

Please Circle your Race/Ethnicity:

1) Black/African American

2) White

3) Hispanic/Latino

4) Native Hawaiian/Pacific Islander

5) American Indian

6) Other (Please Indicate)__________________

Please Circle Your Primary Eating Disorder Diagnosis:

1) Anorexia Nervosa

2) Bulimia Nervosa

3) Eating Disorder- Not Otherwise Specified

Please indicate how long you have been in treatment for your Eating Disorder__________
Eating Attitudes Test
(EAT-26)

Please indicate your current height

Please indicate your current weight
**Eating Attitudes Test (EAT-26)**

The following screening questionnaire is designed to help you determine if your eating behaviors and attitudes warrant further evaluation. The questionnaire is not intended to provide a diagnosis. Rather, it identifies the presence of symptoms that are consistent with either a possible eating disorder. Answer the questions as honestly as you can, and then score questions using the instructions at the end.

<table>
<thead>
<tr>
<th>Please mark a check to the right of each of the following statements:</th>
<th>Always</th>
<th>Usually</th>
<th>Often</th>
<th>Some times</th>
<th>Rarely</th>
<th>Never</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Am terrified about being overweight.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Avoid eating when I am hungry.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>3.</td>
<td>Find myself preoccupied with food.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Have gone on eating binges where I feel that I may not be able to stop.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>5.</td>
<td>Cut my food into small pieces.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>6.</td>
<td>Aware of the calorie content of foods that I eat.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>7.</td>
<td>Particularly avoid food with a high carbohydrate content (i.e. bread, rice, potatoes, etc.)</td>
<td></td>
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<tr>
<td>8.</td>
<td>Feel that others would prefer if I ate more.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Vomit after I have eaten.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>Feel extremely guilty after eating.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>Am preoccupied with a desire to be thinner.</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>12.</td>
<td>Think about burning up calories when I exercise.</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>13.</td>
<td>Other people think that I am too thin.</td>
<td></td>
<td></td>
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<tr>
<td>14.</td>
<td>Am preoccupied with the thought of having fat on my body.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>15.</td>
<td>Take longer than others to eat my meals.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>16.</td>
<td>Avoid foods with sugar in them.</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>17.</td>
<td>Eat diet foods.</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>18.</td>
<td>Feel that food controls my life.</td>
<td></td>
<td></td>
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<tr>
<td>19.</td>
<td>Display self-control around food.</td>
<td></td>
<td></td>
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<tr>
<td>20.</td>
<td>Feel that others pressure me to eat.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>21.</td>
<td>Give too much time and thought to food.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>22.</td>
<td>Feel uncomfortable after eating sweets.</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>23.</td>
<td>Engage in dieting behavior.</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>24.</td>
<td>Like my stomach to be empty.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25.</td>
<td>Have the impulse to vomit after meals.</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Score=

1) Have you gone on eating binges where you feel that you may not be able to stop? (Eating much more than most people would eat under the same circumstances)
   _ No _ Yes How many times in the last 6 months? 

2) Have you ever made yourself sick (vomited) to control your weight or shape?
   _ No _ Yes How many times in the last 6 months? 

3) Have you ever used laxatives, diet pills or diuretics (water pills) to control your weight or shape?
   _ No _ Yes How many times in the last 6 months? 

4) Have you ever been treated for an eating disorder? _ No _ Yes When? 

---
Social Dilemma Survey (SDS)

Directions:

Read each scenario and try hard to imagine the situation as if it is happening to you. Then respond truthfully to each question as if the situation has just occurred. There are no wrong answers.
Imagine you have been talking to Amber, one of the more popular girls in school, the past couple of weeks. You think she is very pretty, nice, and she gets a lot of attention from boys in your school. Since you have been talking to her you have gotten to know people (considered popular) that you otherwise would not talk to. You and Amber have been speaking about getting together and hanging out on the weekend for the past few weeks. You are looking forward to hanging out and finally make plans for this Saturday night. Amber says she will call you sometime Saturday. Saturday night comes and you do not hear from her.

1) Why do you think this has happened?

2) How would it make you feel if it happened to you? Please Circle the One emotion that would best describe the way you feel.

<table>
<thead>
<tr>
<th>Sad</th>
<th>Relieved</th>
<th>Disappointed</th>
<th>Annoyed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angry</td>
<td>Frustrated</td>
<td>Nervous</td>
<td>Happy</td>
</tr>
<tr>
<td>Embarrassed</td>
<td>Lonely</td>
<td>Scared</td>
<td>Unaffected</td>
</tr>
</tbody>
</table>

3) Please circle how strong that feeling would be:

1 Not Strong  2 Slightly  3 Moderately  4 Very  5 Extremely

4) What would you do if this happened to you? Why?

5) How likely would it be for you to find out from Amber why she did not call you?

1 Not at all likely  2 A little likely  3 Somewhat likely  4 Most likely  5 Very likely
Imagine you are walking down the hallway in school between periods. One of the more popular boys in school, who you secretly have a crush on, comes walking around the corner. You make eye contact and notice he has a disgusted, almost angry look on his face. You gather enough nerve to say hello and ask him how he is doing. He ignores you and continues to walk down the hall.

1) Why do you think this happened?

2) How would it make you feel if it happened to you? Please Circle the one emotion that would best describe the way you feel.

- Sad
- Relieved
- Disappointed
- Annoyed
- Angry
- Frustrated
- Nervous
- Happy
- Embarrassed
- Lonely
- Scared
- Unaffected

3) Please circle how strong that feeling would be:

- 1 Not Strong
- 2 Slightly
- 3 Moderately
- 4 Very
- 5 Extremely

4) What would you do if this happened to you? Why?

5) How likely would it be for you to find out from him why he ignored you?

- 1 Not at all likely
- 2 A little likely
- 3 Somewhat likely
- 4 Most likely
- 5 Very likely
Imagine you are sitting at the lunch table with a few good friends. It is the week before the homecoming dance and you have yet to make plans for after the dance. You overhear your friends talking about your good friend Stacy’s party after the dance. You were not aware Stacy was having a party and you have yet to receive an invitation.

1) Why do you think this happened?

2) How would it make you feel if it happened to you? Please Circle the one emotion that would best describe the way you feel.

- Sad
- Relieved
- Disappointed
- Annoyed
- Angry
- Frustrated
- Nervous
- Happy
- Embarrassed
- Lonely
- Scared
- Unaffected

3) Please circle how strong that feeling would be:

1) Not Strong
2) Slightly
3) Moderately
4) Very
5) Extremely

4) What would you do if this happened to you? Why?

5) How likely would it be for you to find out from Stacy why she did not invite you?

1) Not at all likely
2) A little likely
3) Somewhat likely
4) Most likely
5) Very likely
Imagine you are at a school formal dance standing next to a close friend of yours, Kara. One of your mutual guy friends, Jim, approaches the both of you and compliments only Kara on how beautiful she looks. Jim quickly gets distracted by one of his friends and walks away without speaking to you.

1) Why do you think this happened?

2) How would it make you feel if it happened to you? Please Circle the one emotion that would best describe the way you feel.

- Sad
- Relieved
- Disappointed
- Annoyed
- Angry
- Frustrated
- Nervous
- Happy
- Embarrassed
- Lonely
- Scared
- Unaffected

3) Please circle how strong that feeling would be:

1. Not Strong
2. Slightly
3. Moderately
4. Very
5. Extremely

4) What would you do if this happened to you? Why?

5) How likely would it be for you to find out from Jim why he only complimented Kara?

1. Not at all likely
2. A little likely
3. Somewhat likely
4. Most likely
5. Very likely
Appendix G: Social Problem-Solving Inventory for Adolescents (SPSI--A)

**Social Problem-Solving Inventory for Adolescents (SPSI-A): Long Version**

**Identifier:** ____________________________

**Directions:**
Below are statements that reflect how you respond to problems and how you think and feel about yourself afterward. You should think of serious problems that are related to your family, health, friends, school, and sports. You should also try to think about a serious problem that you had to solve recently as you reply to these statements.

**Read each statement carefully.** Think about how you usually think, feel, and behave when you face these types of problems. Circle the number that best describes how true the statement is of you.

<table>
<thead>
<tr>
<th></th>
<th>Not at All</th>
<th>Slightly True of Me</th>
<th>Moderately True of Me</th>
<th>Very True of Me</th>
<th>Extremely True of Me</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. When I’m faced with a problem, I think about how it will affect my well-being.</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
</tr>
<tr>
<td>2. When I have a problem, I decide if I am able to solve it.</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
</tr>
<tr>
<td>3. When I have a problem, I decide if I have the resources and support to solve it.</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
</tr>
<tr>
<td>4. When I have a problem, I think of the ways that I have handled the same kind of problem before.</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
</tr>
<tr>
<td>5. To solve a problem, I do what has worked for me in the past.</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
</tr>
<tr>
<td>6. I try to use facts that I know to solve a problem.</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
</tr>
<tr>
<td>7. When I solve a problem, I use the skills I have developed that have worked for me in the past.</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
</tr>
<tr>
<td>8. When I can’t solve a problem by using methods that have worked in the past, I try to find other ways to deal with the problem.</td>
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<td></td>
<td>When I can’t solve a problem quickly and easily, I think that I am stupid.</td>
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<td>I often doubt that there is a good way to solve problems that I have.</td>
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<td>When I fail to solve a problem at first, I don’t give up. Instead, I believe I will eventually find a good answer.</td>
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<td>I usually believe that there is a good solution to my problem.</td>
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<td>I often doubt that I can solve a complex problem on my own no matter how hard I try.</td>
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<td>14.</td>
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<td>When faced with a hard problem, I believe that, if I try, I will be able to solve it on my own.</td>
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<td>I try to see a problem as a challenge rather than a threat.</td>
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<td></td>
<td>When I can’t solve a problem, I often think that I should give up and ask someone for help.</td>
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<td>I feel afraid when I have an important problem to solve.</td>
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<td></td>
<td>I often doubt myself when I have an important decision to make.</td>
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<td></td>
<td>I get angry when I can’t solve a problem quickly.</td>
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<td>20.</td>
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<td></td>
<td>Complex problems make me very upset.</td>
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SPSI-A (continued). Circle the number that best describes how true the statement is of you.

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<tr>
<td>21. When I am trying to solve a problem, I often get so upset that I cannot think clearly.</td>
<td>A</td>
<td>B</td>
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<td>22. When I am working on a hard problem, I get so upset that I often feel confused.</td>
<td>A</td>
<td>B</td>
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<td>23. I hate solving problems that occur in my life.</td>
<td>A</td>
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<td>24. I often become depressed and do not feel like doing anything when I have a problem to solve.</td>
<td>A</td>
<td>B</td>
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<tr>
<td>25. I get discouraged when my first efforts to solve a problem fail.</td>
<td>A</td>
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<td>26. I spend too much time worrying about my problems instead of solving them.</td>
<td>A</td>
<td>B</td>
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<td>27. I often wait to see if a problem will solve itself before I try to solve it.</td>
<td>A</td>
<td>B</td>
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<td>28. I put off solving a problem for as long as I can.</td>
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<td>29. I avoid dealing with problems in my life.</td>
<td>A</td>
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<tr>
<td>30. I put off solving problems until it is too late to do anything about them.</td>
<td>A</td>
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<td>31. I spend more time avoiding my problems than solving them.</td>
<td>A</td>
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<tr>
<td>32. When faced with a hard problem, I avoid the problem or go to someone else for help.</td>
<td>A</td>
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<td>33. I decide if a problem is part of a larger, more complex problem that should be solved first.</td>
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34. When I have a problem, I find out if it is part of a bigger problem that I should deal with.  
A B C D E

35. When I have a problem, I examine the things that surround me which may cause the problem.  
A B C D E

36. I try to solve a complex problem by breaking it into smaller pieces that I can solve one at a time.  
A B C D E

37. Before I solve a problem, I gather as many facts about the problem as I can.  
A B C D E

38. When I solve a problem, I look at the facts and decide which are the most important.  
A B C D E

39. I try to identify things that might keep me from solving a problem.  
A B C D E

40. Before I pick a solution to a problem, I use a system to help me decide which option is best.  
A B C D E

41. When I solve a problem, I think of a number of options and combine them to make a better solution.  
A B C D E

42. When I try to solve a problem, I can think of a number of options.  
A B C D E

43. I try to think of as many ways to approach a problem as I can.  
A B C D E

44. When I solve a problem, I think of as many options as I can until I can't think of any more.  
A B C D E

45. I approach problems from as many angles as I can.  
A B C D E
SPSI-A (continued). Circle the number that best describes how true the statement is of you.

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46. Before I solve a problem, I determine the effect the solution will have on my well-being or the well-being of others. A B C D E

47. When I decide which option is best, I predict what the outcome will be. A B C D E

48. When I decide what to do, I think of the short- and long-term outcomes of each option. A B C D E

49. When I decide which options are best, I weigh the outcomes for each of them. A B C D E

50. When I select the best solution to a problem, I think of the effect it will have on my feelings. A B C D E

51. Before I try to solve a problem, I set a goal so I know what I want to achieve. A B C D E

52. I keep the goal that I set in mind at all times when I solve a problem. A B C D E


54. I often feel good about the outcome to my problems after I carry out the option I selected. A B C D E

55. After I solve a problem I decide if I feel better about the situation. A B C D E

56. After solving a problem, I assess if the situation is better. A B C D E

57. I often solve my problems and achieve my goals. A B C D E
SPSI-A (continued). Circle the number that best describes how true the statement is of you.

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<td>58. After carrying out a solution to the problem, I decide what went right and what went wrong.</td>
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<td>59. When the outcome to a problem is not satisfactory, I find out what went wrong before trying again.</td>
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<td>60. If the solution to a problem fails, I go back to the beginning and try again.</td>
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<td>61. When a solution does not work, I try to determine what went wrong.</td>
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<td>62. I go through the problem-solving process again when my first option fails.</td>
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<td>63. When a solution fails to solve a problem, I go back to a number of different steps to start again.</td>
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<td>64. When I successfully solve a problem, I decide what I did right.</td>
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Interpersonal Behavior Survey (IBS)
Administration Booklet

Paul A. Mauger, Ph.D., David R. Adkinson, Ph.D., Suzanne K. Zoss, Ph.D.,
Gregory Firestone, Ph.D., and David Hook, M.A.

Published by
WPS
12031 Wilshire Blvd., Los Angeles, CA 90025-1251
Publishers and Distributors

DIRECTIONS: Fill in the information requested on the answer sheet, then read each of the following items carefully and decide how well it describes you. There are NO right or wrong answers. If you feel that the item describes you fairly well or is correct most of the time, fill in the circle marked T on your answer sheet. If you feel that the item description is very much unlike yourself or is wrong most of the time, fill in the circle marked F.

In recording your answers on the answer sheet, be sure that the number of the statement agrees with the number on the answer sheet. Make your marks heavy and black. Erase completely any answer you wish to change. Make only one response to each statement. Do not make any marks on this booklet.
PART I

1. I say what I want to say in most situations.

2. When I play in a game, I really don't care whether I win or lose.

3. Much of the time I am too easily influenced by my friends.

4. I rarely lose my temper.

5. Sometimes I decide to finish a task tomorrow, even when I know I should probably do it today.

6. I give up too easily when others say I can't succeed.

7. It is very important to me to be able to speak my mind.

8. It is never all right to harm someone else.

9. I frequently interrupt people who bore me by talking too much.

10. Sometimes getting into trouble is worth it because it upsets my family so much.

11. Sometimes I blame others when things go wrong.

12. There are times when I would enjoy making someone I dislike look foolish in front of others.

13. I usually do not speak until spoken to by others.

14. I try not to give people a hard time.

15. I don't believe I have a right to get back at a member of my family who treats me unfairly.

16. I probably would sneak into a movie theater if I knew I would not be caught.

17. I would speak out in a meeting to oppose those who I feel are wrong.

18. I never deliberately hurt another person's feelings.

19. I get mad easily.

20. If a friend was unable to keep a promise to do something, I would probably be understanding rather than angry.

21. I get embarrassed easily.

22. Sometimes I feel like swearing.

23. I am quick to give my opinions in class discussions.

24. Sometimes I take my anger out on my friends.

25. Because I hide my true feelings from others, most people don't know when they have hurt me.

26. I often avoid members of the opposite sex because I fear doing or saying the wrong thing.

27. Some people think I have a violent temper.

28. I make sure that people know where I stand on an issue.

29. I don't try to get even when another person does something against me.

30. I enjoy making people angry.

31. There are times when I am not completely honest with people about my true feelings.

32. There are times when I would enjoy hurting people I love.

33. I have questioned public speakers on occasion.

34. I often worry that others will not approve of my conduct.

35. I often become angered and upset by members of my family for no good reason.

36. I never make fun of people who do things I feel are stupid.

37. I don't like to hurt other people's feelings, even when I have been hurt.

38. Sometimes I get angry.

PART II

39. I rarely criticize other people.

40. I find it difficult to compliment or praise others.

41. I resent having members of my family give me orders.
42. When I am praised for doing something better than others, I feel uncomfortable.

43. I don’t worry about what others think of me.

44. I sometimes feel that my opinion is not very important.

45. I tend to help many of my friends make decisions.

46. When I see a person doing a bad job on something, I usually speak right up and let him or her know it.

47. I seldom argue with others.

48. I am not sure that I could be a good leader.

49. I feel that I am good at handling group discussions.

50. I usually tell people off when they disagree with me.

51. I dislike watching violent TV shows.

52. I have at times embarrassed a friend just to get his or her reaction.

53. Sometimes you can’t help hurting others to get ahead.

54. At times I have hit my girlfriend (wife) or boyfriend (husband) during an argument.

55. I have made fun of a teacher or boss who I thought was stupid.

56. I enjoy giving orders and being the boss.

57. I don’t like to speak to people with authority, such as teachers, police officers, or bosses.

58. When a close and respected relative annoys me, I usually hide my true feelings.

59. I am regarded by others as a good leader.

60. When arguing with my girlfriend (wife) or boyfriend (husband), I never give in until I have won.

61. I would not hit back if a friend hit me first.

62. I find it easy to express my love and affection to others.

63. I would enjoy making a fool of a teacher or boss who had previously cut me down in front of other people.

64. I don’t like to win when I have to hurt people in order to do it.

65. I am likely to go along with what others want to do.

66. I don’t like to see anyone punished.

67. When a friend does something that hurts me deeply, I would rather get even than let him or her know of my deep hurt.

68. I have seldom taken the lead in organizing projects.

69. I often apologize for myself.

70. A person who says something stupid deserves to be put down.

71. I take care of my own needs and don’t worry much about others.

72. I frequently pretend not to notice people I know unless they speak to me first.

73. If after leaving a store I discovered that I had been shortchanged, I would go back and ask for the rest of my change.

74. I need to learn to stop letting people push me around.

75. In most situations I would rather listen than talk.

76. I usually say something to a person who I feel has been unfair.

77. I feel that in life you push or you are shoved.

78. I would have a hard time telling someone that I no longer wish to date him or her.

79. I often allow people to push me around.

80. If I had a brother or sister who did poorly in school, I would make sure that he or she knew that I was smarter.

81. I think that you can get ahead in the world without having to step on others.

82. I seem to lose a lot of arguments.

83. There are times when force is necessary to get things done.

84. If I like a teacher at school or a supervisor at work, he or she will
85. I find it difficult to say "no" to a salesperson.
86. When playing a team sport, such as basketball, I feel that it is okay to take out my anger physically on my opponents.
87. I tend to follow the suggestions of others when I am with a group of people.
88. If I were interrupted in the middle of an important conversation, I would ask the person to wait until I had finished.
89. I find it difficult to stand up for my rights.
90. I would not return a defective item for fear the store manager would claim I broke it.
91. I just don't know what to say when someone says something nice to me.
92. I am afraid to refuse to do favors for friends for fear that they will not like me.
93. I would be afraid of being in a fist fight.
94. Rather than ask for a favor, I will do without.
95. I would not question a salesperson about the price of an article, even if it seemed too high.
96. I would state what I think is right, even if someone I respect had just said something different.
97. I enjoy being involved in a good argument.
98. It is not right to hurt others even if they hurt you first.
99. Sometimes I feel embarrassed when I receive praise, even though I have earned it.
100. I often imagine myself beating or killing a person or an animal.
101. I can usually convince others that my ideas are right.
102. I find it hard to express my true feelings when I am fond of a member of the opposite sex.
103. Even if I were very angry with someone, I would not make fun of him or her.
104. I would hesitate to return food in a restaurant, even if it were burnt.
105. Even if someone is unfair, I usually don't say
106. There are times when I would like to pick fist fights.
107. I usually agree readily with the opinions of others.
108. If someone were annoying me during a movie, I would ask that person to stop.
109. Sometimes I make fun of people who look very different from me.
110. If my family is misinformed on a subject, I try to inform them of the facts.
111. I would find it difficult to ask people for money or donations, even for a cause I believe in strongly.
112. If I were unfairly criticized by a friend, I would quickly express my feelings.
113. When someone gives me a present, I become embarrassed and uneasy.
114. I keep quiet when people are unreasonable.
115. I find it difficult to ask a friend for a favor.
116. People often take advantage of me.
117. Sometimes I say nasty things when people don't understand what I am trying to do.
118. I will give in on an issue just to avoid trouble, even though I know I am right.
119. I seldom disagree with others.
120. I dislike reducing my girlfriend [wife] or boyfriend [husband] to tears.
121. I have a hard time saying "no" to friends' requests.
122. Sometimes when I am depressed, I get upset with my friends.
123. Sometimes I lose an argument because I am afraid of hurting the other person's feelings.
124. Generally I don't disagree with members of my family because I don't want to hurt their feelings.
125. I rarely tease others.
126. I find it hard to ask members of my family
127. I do my best to prevent my friends from taking unfair advantage of me.

128. When I am angry with members of my family, I let them know it.

129. I usually stick up for my opinion in a family argument.

130. I would not ask even a good friend to lend me money.

131. If a friend of mine damaged some of my best records, I would ask him or her to replace them.

132. I try to make sure that people do not take advantage of me.

133. I would remind a friend who forgot to pay back money he or she had borrowed from me.
Appendix I: Final Defense Power Point Slides

The Social Problem-Solving Approach of Adolescent Females Diagnosed with an Eating Disorder
Toward a Greater Understanding of Control
Roger K. McFillin
Philadelphia College of Osteopathic Medicine

Statement of the Problem
- Disordered Eating and Body Image Concerns: A Cultural Epidemic?
- Eating Disorders in Adolescence: A Call for Research
- Developmental Concerns within Evidence-Based Treatment Protocols
- The Function of Disordered Eating: Gaining Control
- Skill Deficits and Control Loss

Background and Significance: Evidence-Based Psycho-Social Interventions
- The Efficacy of CBT and Interpersonal Psychotherapy for BN (Keel & Haedt, 2008)
- Eating Disturbance as a Coping Deficit: A Focus on Skill Building (Cognitive, Behavioral, Interpersonal)
- Anorexia Nervosa: A Call for Effective Treatment Interventions

Background and Significance: Coping and Disordered Eating
- Emotion Focused, Conflict Avoidant, Low Self-Efficacy, Passive strategies (Ball & Lee, 2000)
- External Locus of Control, Higher Desire for Control, Greater Fear of Losing Control (Sugengor, Horn, & Hudson, 2003)
- Internal Attributions for Negative Events "It's my fault ...." (Morrison, Waller, & Lawson, 2006)

Background and Significance: Social Information-Processing (SIP)
- Crick & Dodge's (1994) Reformulated Social Information-Processing Model
- Cognitive Response to Social Cues Impacting Social Adjustment in Children
- Subjective Interpretation of Social Cues Impacts Decision Making and Coping: The Impact of Attributions
- Immense Clinical Applications Across Populations

Background and Significance: Social Problem-Solving
- Process of Identifying Effective Solutions for Everyday Problems (D'Zurilla & Goldfried, 1971)
- Includes Automatic Processing Strategies, Cognitive/Emotional/Behavioral factors related to self-efficacy, and Specific Problem-Solving Skills
- Social Problem-Solving Skills are highly correlated with psychological adjustment and coping
- Linked with Social Information-Processing Model
Background and Significance: Assertiveness

- Conflict Avoidance in Problem-Solving
- Predicted Association with Control Loss
- Robust Data on Assertiveness and Disordered Eating in Adult Women (Surgenor, Horn, & Hudson, 2003).

Research Questions

- What if any Interpersonal Skill Deficits may exist in Adolescent Females Diagnosed with an ED?
- Do Adolescent Females Diagnosed with an ED Interpret Social Dilemmas Differently (Cognitive Processing Bias)?
- What Deficits in Coping May Exist?
- Social Problem-Solving Skill Deficits?
- Assertiveness Skill Deficits?

Research Design

- Between Groups Design
- Comparison of a Clinical and Non-Clinical group of Adolescent Females (14-17)
- Social Information-Processing Variables
- Social Problem-Solving Skills
- Assertiveness Skills

Participants

- 114 Adolescent Females between the ages of 14-17
- Patients at Penn State Hershey Medical Center's Adolescent Eating Disorder Program (n=50) were compared to a non-clinical control group of students attending Salisbury Middle and High School in Allentown, PA (n=64)

Inclusion Criteria: Clinical Group

- Between ages 14-17
- Met clinical criteria for either Anorexia Nervosa, Bulimia Nervosa, or EDNOS upon admission to the program
- Currently receiving treatment in either the Partial, IOP, or Outpatient program.
- Parental/Guardian Consent
- Patient Assent

Inclusion Criteria: Control Group

- Between ages of 14-17
- Not currently in treatment for a mental health condition
- No Eating Disorder Symptomatology as screened by the EAT-26 (Scores >19)
- Parental/Guardian Consent
- Student Assent
SDS Dependent Variables

- Likelihood of Directly Questioning Provocateur
  - How likely would it be for you to find out from (provocateur) why she.......?
  - 5 Point Likert Scale

Measures

- Social Problem-Solving Inventory for Adolescents (SPSI-A)
  - 64-item inventory assessing Social Problem-Solving in Adolescents
  - Valid and Reliable measure (Frauenknecht & Black, 1995).
  - Automatic Process Scale
  - Problem Orientation Scale
  - Social Problem-Solving Skills Scale

Measures

- Interpersonal Behavior Survey- Short Form (IBS)
  - 133 of items taken from 272-item measure
  - Valid and Reliable measure differentiates Interpersonal Assertiveness from Aggressiveness
  - 6th grade Reading Level
  - General Assertiveness Scale
  - Subscales include: Frankness, Praise, Requesting Help, and Refusing Demands

Measures

- Eating Attitudes Test-26 (EAT-26)
  - Self-Report Screening Tool
  - 26 items assessing psychological and behavioral symptoms associated with anorexia and bulimia
  - Cutoff Score of 20 or above has shown to have an accuracy rate of at least 90% in diagnoses of an eating disorder
  - Given to Control Group to Rule Out Eating Disorder Symptomatology

Procedures

Control Group Recruitment
- Classroom Presentations for Recruitment- Study on how Adolescent girls solve social problems
- Informed of Screening Procedure – Parental notification and Referral
- Parental/Guardian Consent
- Student Assent
- During School Hours

Procedures

Clinical Group Recruitment
- Informed about Study on How Adolescent Females with an Eating Disorder Solve Social Problems
- Presented to patients during scheduled appointments in which parents/guardians were present
- Stressed anonymity and results not impacting treatment
- Obtained consent and assent
- Scheduled convenient time to complete measures
Demographics - Clinical Subjects

- 50 Subjects
- \( M \) age = 15.83 (SD = 1.15)
- 84% Caucasian
  6% Hispanic/Latino
  4% African American/Black
  6% Other.

Demographics - Clinical Subjects

Diagnoses

- Anorexia Nervosa (N = 30)
- Bulimia Nervosa (N = 11)
- EDNOS (N = 9)

Treatment

Length \( M = 9.98 \) months (SD = 1.1)
Range = 0-60 months

Demographics - Non-Clinical Controls

- 64 Total Subjects volunteered
- 5 Subjects Data Excluded (EAT-26 > 19)
- \( M \) age = 15.45 (SD = .88)
- 90% Caucasian
  4% Hispanic/Latino
  1% Black
  6% Other
- \( M \) EAT-26 Score = 3.80 (SD = 4.12)

Measures

- Social Dilemma Survey (SDS)
- Modeled from previous research studies
- 4 hypothetical ambiguous relational provocation vignettes
- Intent of the provocateur was ambiguous
- Developed from focus group interviews with 9th grade girls
- Informally administered to 12 9th grade girls to assess ambiguity and further scrutinized by research team

SDS Dependent Variables

- Intent Attributions
  - Why do you think this happened?
  - Coded as either Hostile, Benign, or Ambiguous
  - Affective Intensity
  - How would it make you feel if it happened to you?
  - Circle the one emotion that BEST describes the way you would feel
  - Circle How Strong that feeling would be:
  - Measured on 5 Point Likert Scale (not strong-extremity)

SDS Dependent Variables

- Coping Strategies
  - What would you do if this happened to you? Why?
  - Intrapunitive Avoidant (Adolescent Coping Scale, Frydenberg & Lewis, 1993)
  - Hedonistic Avoidant (Adolescent Coping Scale)
  - Adaptive Approach
  - Non-Adaptive Approach
### Procedures - Control Subjects

- Took place in School Cafeteria/Conference room-staggered participants
- Assigned a unique code # - needed if EAT -26>19
- Completed Demographic Section (Race/Ethnicity, age, grade, existence of medical or mental health condition)
- Administered EAT-26 as screening tool
- Completed SDS, SPSI-A, and IBS according to scripted protocol

### Procedures - Clinical Group

- Scheduled on individual basis that coincided with site visit
- Completed all 3 measures in either individually or in a small group in a private office
- 2 subjects completed measures at home
- Completed Demographic Section (age, grade, race/ethnicity, current diagnosis, and length of treatment)
- Completed all 3 measures according to scripted protocol

### Hypotheses

**#1**
- Clinical group will identify > number of hostile intent attributions

**#2**
- Clinical Group will identify > intensity of emotions

**#3**
- Clinical group will identify greater number of Avoidant coping strategies specifically a greater number of Intrapunitive Avoidant Strategies

**#4**
- Clinical group will be less likely to directly question provocateur
Hypotheses

#5
- Adolescent females diagnosed with an eating disorder will perform poorer on a measure of social problem-solving skills as compared to the non-clinical control group.

Hypotheses

#6
- Adolescent females diagnosed with an eating disorder will display lower scores on a measure of interpersonal assertiveness as compared to the non-clinical control group.

Results

Hypothesis #1 Hostile Attributions
Independent Sample T-test
Clinical group showed a significantly greater tendency to attribute hostile intent to ambiguous social dilemmas ($M=2.22, SD=1.06$) than did the non-clinical control group ($M=1.22, SD=1.08$), $t(107)=-4.86, p=.000, d=.94$.

Clinical vs. Control: $M$ Attributions Across Dilemmas

<table>
<thead>
<tr>
<th>Subjects</th>
<th>Hostile</th>
<th>Benign</th>
<th>Ambiguous</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED Group</td>
<td>2.22**</td>
<td>1.16*</td>
<td>.628*</td>
</tr>
<tr>
<td>Controls</td>
<td>1.22**</td>
<td>1.03*</td>
<td>1.15*</td>
</tr>
</tbody>
</table>

Note. *$=p<.05$; **$=p<.001$

Results

Hypothesis #2 Affective Intensity
Independent Sample T-Test
The Clinical group identified emotions as significantly more intense ($M=3.24, SD=.66$) than the control group ($M=2.75, SD=.98$), $t(107)=-3.13, p=.002, d=.59$. 

Figure 1: Total percentage of item distributions measured between groups across all four dilemmas.
Results

Hypothesis #3 - Coping

Overall, the adolescent females with an eating disorder chose significantly more avoidant coping strategies ($M=2.76, SD=1.20$) than did those in the control group ($M=1.88, SD=1.1$), $t(100.37) = -3.95, p=.00, d = .76$.

Results

Hypothesis #3 - Coping

As predicted, adolescent girls with an eating disorder identified significantly more intrapunitive avoidant strategies ($M=1.44, SD=1.34$) than subjects in the non-clinical control group ($M=.66, SD=.96$), $t(107) = -3.52, p=.001, d = .67$.

Results

Hypothesis #3 - Coping

The non-clinical control group identified significantly more adaptive approach coping strategies ($M=2.02; SD=1.11$) than did the eating disorder group ($M=1.12; SD=1.15$), $t(102.5) = 4.12, p=.000, d=.80$.

Results

Hypothesis #4

First 3 dilemmas the non-clinical control group was significantly more likely to directly question the provocateur as a social problem-solving strategy ($M=3.08; SD=.73$) compared to the eating disorder group ($M=2.75; SD=.94$), $t(107) = 2.11, p = .037, d = .39$. 
Study Limitations

Social Dilemma Survey (SDS)
- No validation of Social Information Processing Mechanisms
- The impact of the Vignettes?
- Inter-rater reliability

Limitations
- Differences among ED diagnoses?
- Large variability amongst length of treatment
- Severity of Eating Disorders?
- Co-morbid diagnoses
- Cannot predict Causality
- Inherent concerns of self-reported data
- The impact of the EAT-26 on the control group?
- Participants were majority Caucasian Females in Suburban/Rural areas

Future Directions

More Complex Research Designs
- Assessing impact of SIP and SPS on the development and maintenance of disordered Eating
- Designs that reflect causality between symptom severity and degree of skill deficits
- Do hostile intent attributions increase risk for the development of ED's/other disorders?
- Do hostile intent attributions influence avoidant coping strategies in ED patients?
- Do ED symptoms represent an Intrapsychic Avoidant Coping Strategy?

Future Directions
- Do differences exist amongst ED diagnoses on measured variables?
- The development of interventions that support a SIP model of disordered eating
- What is the impact on SIP variables and perceived control?
- Expansion of research across populations
- Origins of the development of cognitive processing biases- the impact of trauma?