University of Nevada, Reno

Acceptance and Commitment Therapy (ACT)
As a Workshop Intervention for
Body Dissatisfaction
And Disordered Eating Attitudes

A Dissertation submitted in partial fulfillment of the
Requirements for the degree of Doctor of Philosophy in
Clinical Psychology

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Abstract

This study was a small randomized clinical trial collecting pilot data to assess the effectiveness of a one day Acceptance and Commitment Therapy (ACT) workshop targeting body dissatisfaction and disordered eating attitudes. The treatment was compared to a wait-list control condition. The participants were seventy-three women from a local university and a medium sized city in the Western United States. Participants in the wait-list control group completed one week of self-monitoring of hunger and satiety and attended three appointments where they completed standardized measures. Subsequently they were offered the workshop and completed measures immediately post-workshop. Participants in the treatment group attended an initial appointment where they completed standardized measures. Then they attended the workshop and post-measures, and then attended two, once weekly follow up appointments. They also self-monitored hunger and satiety for one week following the workshop. Disordered eating pathology, body anxiety, distress related to thoughts about eating and body image and measures of experiential avoidance showed significant reductions in the treatment group when compared to the control group. Acceptance was shown as a mediating variable for changes in distress levels related to thoughts about eating and body image. Implications are that the study shows strong support as a brief intervention for a broad range of women experiencing disordered eating attitudes and distress related to eating and body image.
Dedication

This dissertation is dedicated to every woman, young and old, who has ever felt uncomfortable in her own skin: May acceptance be the answer.

Life Won’t Wait

Life’s already started

It started while I’ve been waiting

Waiting to be old enough,

To be skinny enough

To have the right love

To understand the how and why

But as with life

Death won’t wait for me to be:

Federal agent supermodel with prince charming

And mother Teresa’s eyes

So if death won’t wait

Long enough for me to live

I’m thinking that neither will I

By: A workshop participant

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Background and Significance

Introduction

In recent years, the literature on eating disorders prevention and treatment has identified a “normative discontent” among women living in the United States with regard to body perception, eating, and weight (Rodin, Silberstein, & Streigel-Moore, 1984; Neimeier, 2004). While a myriad of eating problems are prevalent among women in Western society (Tylka, 2004), unhealthy patterns of eating manifest in a variety of ways, and are often associated with short-term and long-term health consequences (Chavez & Insel, 2007; Brownell & Wadden, 1993), and are correlated with other aspects of psychological distress such as substance abuse, depression, and anxiety disorders (McLaren, Beck, Patten et al., 2008; Francione, C.L., 2008; Kaye, Bulik, Thornton, Barbarich & Masters, 2005). Clinically severe eating disorders (i.e. anorexia and bulimia) represent two types of disordered eating patterns. Binge eating disorder, though not yet represented in the DSM-IV-TR as an eating disorder, is another category of unhealthy eating behavior (APA, 2000). While the clinically severe eating disorders warrant research and clinical attention, a more prevalent problem in the United States is a pattern of less severe, yet chronic and unhealthy eating patterns paired with body dissatisfaction and distress related to eating and weight (Tylka, 2004; Tylka, & Subich, 2002a).

Disordered eating behaviors and attitudes have been shown to be prevalent across the lifespan of women in the United States. Body mass index in childhood has been shown to be predictive of body dissatisfaction in mid-life, and the two are also correlated
across the lifespan (McLaren, Hardy & Kuh, 2003). In addition, body dissatisfaction has been associated with poor quality of life and other adverse health-related behaviors, such as avoidance of physical activity (Reboussin et al., 2000; McLaren & Kuh, 2003). Research has shown that disordered eating attitudes, such as body dissatisfaction, and disordered eating behaviors are correlated with one another in non-clinical populations; that is, they occur concurrently as they do in clinical eating disorders. Mintz and Betz (1988) showed in an undergraduate sample that the degree of disordered eating (i.e. binging, purging, fasting, and use of appetite control pills), was strongly correlated with factors such as lowered self-esteem, negative body image, obsessive thoughts concerning weight and shape and interference of weight related concerns with quality of life.

Body Dissatisfaction

Body dissatisfaction, or negative evaluation of one’s weight and shape, is the unifying symptom among anorexia, bulimia and binge eating disorders (APA, 2004), and has been shown to exist across sub-clinical levels of disordered eating. It may arguably be the symptom which provides the most reliable differential diagnosis of an eating disorder: Across all three eating disorders, body dissatisfaction indicates image-related distress and purposeful weight control strategies, versus symptoms (i.e. changes in weight, low weight, overeating) accounted for by a medical etiology or other causes. Body image is a complex construct. In their developmental contextual theory, Lerner, Skinner & Sorell (1980) proposed that experience with one’s body is influenced by a variety of factors including cultural, developmental, biological and historical. Specifying the relative impact of these contexts on body satisfaction versus dissatisfaction is complex, and it likely varies by individual (McKinley, 2006). Contemporary research
has conceptualized body image as one’s cognitive, emotional and behavioral reactions to body weight and shape (Tiggerman & Lynch, 2001).

In a review of the past twenty years of research, Tiggerman and Lynch (2001) report that body dissatisfaction among women, as well as evaluation of specific body parts and body shape remains relatively stable over the lifespan; however, disordered eating behaviors have consistently shown a decrease in the first 10 years following college. Body image dissatisfaction has been shown to be a source of distress in cohorts of middle-age to older women (i.e. between ages 40 and 80). In a study examining body dissatisfaction and disordered eating attitudes among two cohorts of older women (ages 50-65 and 65 and older), Lewis and Cachelin (2005) found similar levels of body dissatisfaction in both groups, but less disordered eating and dieting behaviors among the older cohort. Examining weight anxiety in women over fifty years of age, Bennet and Stevens (1996) found levels of weight anxiety comparable to that of younger women; greater age was also related to a greater discrepancy between one’s actual weight and their stated ideal weight. Therefore, while body dissatisfaction and disordered eating behaviors co-occur, research suggests that body dissatisfaction and weight and shape-related anxiety remains stable over time, while disordered eating behaviors decrease. Therefore, as women age the two clusters of symptoms are related, yet appear to be functioning somewhat independently.

The most predictive, objective factor of body dissatisfaction across the lifespan is body mass index (McLaren, Hardy & Kuh; Tiggerman & Lynch). Body mass index (BMI) is a mathematical relationship between weight in kilograms and height. The relationship between body mass index and body dissatisfaction is a positive correlation
(i.e. higher BMI relates to high levels of body dissatisfaction), except in the population of clinical anorexia where a perception of overweight exists in the presence of low BMI. However, other predictive factors for body dissatisfaction have been found across various age groups of women. Specifically, in a prospective study examining factors related to body image satisfaction, McLaren, Hardy and Kuh (2001) identified age of menarche, number of pregnancies, onset of menopause and use of hormone replacement therapy to be factors related to body dissatisfaction. Specifically, women who reported beginning menarche at a later age had less reported body dissatisfaction during middle age, and women who began taking hormone replacement therapy at the onset of menopause reported less body dissatisfaction. These results were not accounted for by BMI. However, body mass index during childhood was identified as a primary predictive factor for both BMI and level of body dissatisfaction during middle age (McLaren, Hardy & Kuh, 2003). Thus, female biological life events contribute to body dissatisfaction in women both by influencing BMI over the lifespan, and also appear to have some influence independent of BMI. McLaren, Beck and colleagues (2008) investigated mental health variables (i.e. anxiety and depression symptoms) among cohorts of men and women with a range of BMIs. Within samples of men and women with either low or high BMIs, a higher incidence of anxiety and mood disorders was shown compared to cohorts with normative body mass indexes. Therefore, both body dissatisfaction and other areas of psychological distress appear to be more prevalent among those with high and low BMIs.

Another factor contributing to a normative discontent related to body image may be societal ideals promoted in Western cultures. Lewis and Chachelin (2005) found a
positive correlation between fears of aging and disordered eating symptoms and body dissatisfaction. It is suggested that this may be driven by physical changes (i.e. sagging skin, wrinkles, body shape changes) due to aging which create more distance from the Western perception of female beauty. In a cross-sectional study, McKinley (2006) examined developmental and cultural contexts as factors influencing body dissatisfaction. McKinley (2006) discusses the decrease in the Western standard of thinness since 1959 in public media, creating an image that has become increasingly difficult (if not impossible) to attain. Cohort differences based on contextual exposure to an increased thin-ideal were proposed. Two cohorts of women (ages 17-22 and their mothers, ages 38-58) were followed from 1993 to 2004. The study was limited in its ability to make strong conclusions about the societal impact on body dissatisfaction because of confounds with other variables such as developmental differences, and a lack of overlap of age between the cohorts over the ten year period. What is subjectively apparent in contemporary Western society is that a stark contrast exists between food available in plentiful amounts, and the self-control necessary in that context to maintain a low BMI. Efforts at maintaining a reasonable calorie intake and a healthy weight may even arguably require a substantial effort at self-control in the present context.

Clinical Implications Across the Lifespan

While disordered eating behaviors have been shown to decrease over the lifespan, body dissatisfaction and disordered eating attitudes are strong predictors of binge eating, purging and dieting within a wide range of age cohorts. Considering that body dissatisfaction remains relatively stable across the lifespan, an important clinical and research question is whether this is a problem that necessitates intervention. If women in
Western society maintain a normative discontent related to their bodies, yet do not develop clinically severe eating disorders on average, what is the resulting impact of continued dissatisfaction with one’s body? The answer to this is arguably complex, and identifying a unifying contextual cause to body dissatisfaction is not likely. However, strong relationships between BMI, body dissatisfaction, general psychological distress (including anxiety and depressive disorders) and disordered eating have been shown.

While the predictive nature of the relationships is not clear, they represent a cluster of symptoms existing at high rates across female age cohorts. Most research on the impact and clinical correlates of body image dissatisfaction focus on the associated disordered eating behaviors, such as binging, purging and repeated dieting efforts.

Research on disordered eating has frequently assessed symptoms in college-aged women, an age cohort showing a particularly high level of disordered eating behaviors and attitudes. Up to 80% of women have reported dieting during their first year of college (Streigel-Moore, Silberstein, Grunberg & Rodin, 1990), and up to 88% of normal weight college women report a desire to be thinner (Raudenbush & Zellner, 1997). Disordered eating behaviors such as calorie restriction, bingeing and purging and use of other compensatory behaviors have been shown to occur at a high frequency among college samples (Schwitzer, Rodriguez, Thomas & Salimi, 2001; Protisky & Marek, 1997; Harris, S.M., 1995; Hesse-Biber, S., 1992; Lemberg, 1992; Minz & Betz, 1988).

Additionally, the use of diet supplements and stimulants for the purposes of weight control has also shown a high prevalence rate in undergraduate samples. In a sample of undergraduate women, Mintz and Betz (1988) showed the prevalence rate for using “appetite control pills” to be 20% of undergraduate women. A more recent study by
Beitz, Drews, Pearson, Follette and Lillis (2003) showed that 30% of an undergraduate sample had used an over the counter stimulant (i.e. PPA, Mahuang, and other forms of ephedrine) at least once within the last year for the purpose of weight control.

In addition to a high percentage of weight control behaviors in undergraduate women, research has also shown this population to exhibit other DSM-IV-TR criteria of eating disorders, such as a preoccupation with weight, fear of gaining weight and a negative body image (Shweitzer and colleagues, 2002). Research with samples of undergraduate women have shown prevalence rates of 25%-40% for those who are concerned with body image, weight management or food intake (Bishop, Bauer & Baker, 1998; Douglas, Collins & Warren, 1995; Kurtzman, Yager, Landverck, Weismeier & Bodurka, 1989; Tsai, Hoerr & Song, 1998).

Disordered Eating in Middle-Aged and Older Adults

Even though disordered eating behaviors typically decrease over the lifespan, the predictors of these behaviors (i.e. disordered eating attitudes, low perceived self-competence, high BMI, weight or body shape anxiety) exist in middle aged cohorts and cohorts of women over 50 (McKinley, 2006; Bennett & Stevens, 1996; Lewis & Cachelin, 2001). On average, women tend to gain ten pounds per decade after the age of twenty (Andres, 1989). Given that body dissatisfaction is consistently related to higher body mass index, it isn’t surprising to find that body dissatisfaction and similar characteristics remain stable over time. In addition, obesity in women between ages eighteen to eighty has markedly increased over the past fifteen years. A large study by the Behavioral Risk Factor Surveillance System (2007) showed obesity at rates of 30% in women between ages 70-80, a new trend of obesity in older adults. Rates of obesity also
were shown to have risen significantly in all age groups of women since the early 1990s. Given that body dissatisfaction, disordered eating attitudes and obesity are co-occurring throughout the female lifespan, this is arguably a constellation of eating related problems which necessitates clinical attention. Quality of life is another consideration for women with high Body Mass Indexes. In addition to the well-known health consequences of being overweight, high levels of weight related anxiety has been related to life-style factors such as high rates of unemployment, anxiety and depressive symptoms (Bennet & Stevens, 1996).

**Necessity of Intervention**

Although research is limited with regard to sub-clinical levels of disordered eating, several studies have shown that sub-clinical levels of disordered eating have clinical implications warranting intervention. Correlates of sub-clinical disordered eating behaviors have been investigated among college women in both treatment seeking and non treatment seeking samples. A review of this literature by Neimeier (2004) reports that treatment seeking samples of the sub-clinical disordered eating population show significant psychological distress related to anxiety and depression. Results have been mixed as to whether samples of treatment seeking individuals with clinically severe eating disorders actually have greater associated pathology than those with sub-clinical eating disorders (Neimeier, 2004).

In non-treatment seeking populations of sub-clinical bulimia nervosa (BN), Neimeier (2004) reviews that bingeing and purging have been associated with high levels of anxiety, depression, alcohol and drug use, relationship difficulties, and higher dissatisfaction with school and life in general. In a separate study by Neimeier (2004),
college students with sub-clinical eating disorders showed that disordered eating attitudes (i.e. “body dissatisfaction, over-concern with eating, weight and shape, and preoccupation with eating, weight and shape” (p. 2)) and binging were associated with higher levels of general pathology and decreased quality of life. Binging in particular was found to predict increased substance use more so than dietary restriction; disordered eating attitudes predicted negative affect and anxiety more so than dietary restriction or binging; and a linear relationship was found between disordered eating symptomology and general psychopathology (Neimeier, 2004).

Currently, only a handful of studies have assessed the relative impact of sub-clinical disordered eating leaving this population rather not well researched as a separate population from clinical eating disorders. With a variety of disordered eating behaviors present among college samples at sub-clinical levels, a categorical diagnosis may not best capture this population. Instead, it may be more effective to investigate dimensions of disordered eating (i.e. compensatory behaviors, disordered eating attitudes, and dietary restriction) among college samples rather than attempt to define categories of sub-clinical eating disorders.

The continuity hypothesis of eating disorders supports this idea. Originally proposed by Nylander (1971), the continuity hypothesis states that clinically severe eating disorders exist on one endpoint of a continuum of disordered eating attitudes and behaviors among women. In this way, disordered eating behavior is not proposed to be functionally different from eating disorders, but only quantitatively different with regard to symptom severity and frequency. Research showing that women with sub-clinical disordered eating do not usually develop clinically significant eating disorders supports
the continuity hypothesis (Nylander, 1971). In fact, across junior high, high school and college samples, the majority of girls exhibiting disordered eating behaviors will not develop a clinically severe eating disorder (Killen et al. 1994, Patton, Johnson-Sabine, Mann & Wekeling, 1990; Drewnowski et al., 1994). However, as research shows, dissatisfaction with body shape and size continues to exist throughout the female lifespan, even when eating disorders do not manifest.

Given that disordered eating behaviors at sub-clinical levels and body dissatisfaction are associated with psychopathology and poor quality of life, intervention at the sub-clinical level is arguably necessary. Prevention programs for eating disorders have targeted sub-clinical populations, while psychological treatments have historically targeted clinical populations (i.e. DSM-IV-TR diagnostic categories). Previous efforts at intervention with sub-clinical eating disorder populations have focused on implementing prevention programs with school-aged girls and young women. Prevention programs, however, have not shown success in the prevention of eating disorders.

**Efficacy of Eating Disorders Prevention Programs**

Kessler and Albee (1975) distinguish between primary, secondary and tertiary levels of prevention. Shisslak, Crago, Neal & Swain (1987) summarize the goals of each level of prevention: primary prevention aims at reducing the incidence of the disorder, secondary prevention focuses on reducing the duration of a disorder, and tertiary prevention aims at reducing impairment resulting from an existing disorder. Shisslak and colleagues (1987) state that historically, prevention efforts for psychiatric disorders have usually focused on secondary and tertiary prevention. However, over the past 15 years, prevention programs for eating disorders have largely followed a primary prevention
model, where didactic material is implemented in school settings aimed at preventing the incidence of clinically severe eating disorders.

The overall results of prevention programs implemented in educational settings, as reviewed by Mussell and colleagues (2000), is that while the programs are shown to increase knowledge about eating disorders and disordered eating behaviors, all programs failed to show improvements in or prevention of eating disordered behavior both at immediate assessment and at follow up. Psychoeducation has been shown to repeatedly increase knowledge but have little immediate effect and no long-term effects on body dissatisfaction, weight and food concerns or disordered eating behaviors. Instead of focusing on an information-based (i.e. psychoeducational) model of prevention programs, Steiner-Adair and colleagues (2002) designed and implemented a program which focused on increasing self-esteem, promoting body acceptance, providing leadership opportunities for participants and teaching coping strategies in response to the sociocultural pressures towards unhealthy eating. The results of this program showed an increase in weight-related body self-esteem (i.e. a better body image) and an increased knowledge of eating disordered behavior, which were maintained at a six-month follow up. However, weight control behaviors (i.e. restricting food intake) were unaffected by the program (Steiner-Adair et al., 2002).

Stice, Mazotti, Weibel & Agras (2000) have also developed a prevention program extending beyond a psychoeducational model. The model implemented by Stice and colleagues (2000) is a dissonance-based model, focused on creating cognitive dissonance from the “thin-ideal” via a series of verbal, written and behavioral exercises. The theory behind the dissonance-based model was that cognitive dissonance of a thin-ideal would
reduce internalization of this body image, thereby decreasing negative body image, dieting and negative affect, which would theoretically decrease disordered eating (Stice, et al., 2000). Results from studies utilizing this intervention have shown significant immediate reductions in body dissatisfaction, dieting, negative affect and bulimic symptoms. However, results decreased over time (at 6 month follow up), and were only marginally different from control groups who engaged in a healthy weight management intervention or a psychoeducational intervention.

Programs extending beyond psychoeducation and focusing on cognitive dissonance to the “thin-ideal” (Stice, Mazotti, Weibel & Agras, 1999; Stice, Chase, Stromer, Appel, 2000; Stice, Trost & Chase, 2002) or those that challenge sociocultural ideals (Sapia, 2001) have been moderately effective at decreasing body dissatisfaction and associated factors (i.e. negative mood, low self-esteem, drive for thinness). However, the effectiveness of these programs also decreased over time, and did not show maintenance of changes in disordered eating behaviors. The research showing the ineffectiveness of prevention programs suggests that a new approach for intervening with women who have high body image concern is necessary.

In investigating why psychoeducation for eating disorders have not shown effectiveness, and in efforts to create a more effective intervention targeting disordered eating behaviors, it may be effective to address the apparent inconsistency that exists between psychoeducation on healthy weight and healthy eating behaviors and the sociocultural norms that exist regarding the thin-ideal. Sociocultural ideals of weight and eating, as well as athletic factors and other factors associated with one’s family history (Davis & Katzman, 1999), gender (Fairburn & Beglin, 1990) and developmental stage in
life (Shisslak, Crago, Estes & Gray, 1996) have all been shown to influence disordered eating, negative body perception and increase value of the thin-ideal (Irving, 1990; Stice, Schupak-Neuberg, Shaw & Stein, 1994; Levine & Smolak, 1996; Steiner-Adair, 1994). Smead (1985) proposed that changing the eating behaviors and goals for weight and shape in women may be problematic when facing sociocultural norms exhibited in the media. Shisslak and colleagues (1987) state that the possibility of a successful eating disorders prevention program has often been doubted because modifying the sociocultural influences on young women (i.e. the thin-ideal perpetuated in the media) is impossible. It may be that the sociocultural influences on girls and women create thoughts and feelings about weight and eating that are inconsistent with what psychoeducation programs are teaching to be healthy eating behaviors and weight norms. Thus, psychoeducation programs to prevent eating disorders may be largely unsuccessful for two reasons: (1) because disordered eating behavior already exists at a high percentage in the target populations of the programs, and (2) that disordered eating in the target populations is maintained by sociocultural norms of eating and weight which are valued more than psychoeducation on healthy eating behaviors.

Summary

Given the research on clinical trials with clinically diagnosable eating disorders, and studies of prevention programs aimed at less severe, or non-clinical populations, it appears that improvements in both the prevention and treatment of body dissatisfaction and related disordered eating behaviors is necessary. Considering the similar associated psychopathology evidenced in clinically severe eating disorders and sub-clinical disordered eating, it may be useful to conceptualize body image dissatisfaction and
associated disordered eating from a functional/dimensional approach rather than the current categorical approach. Consistent with the continuity hypothesis of disordered eating, a functional/dimensional conceptualization proposes a similar function across disordered eating severity. Thus, instead of aiming at preventing clinically severe eating disorders, or targeting a clinical category of eating disorders, a function/dimensional conceptualization would suggest that intervention be targeted at reducing body image dissatisfaction and disordered eating behaviors across a continuum of severity.

A Functional/Dimensional Conceptualization Of Body Image Dissatisfaction and Disordered Eating

Syndromal Classification

The DSM-IV utilizes syndromal classification to categorize psychological disorders, including the eating disorders. Syndromal classification focuses on signs and symptoms (i.e. what a client reports or what is observed by the clinician), and defines disorders through the topography or structure of these symptoms (Hayes, Wilson, Gifford & Follette, 1996). The goal of using syndromal classification in the DSM-IV is to identify observable signs and symptoms as a particular category of psychological disorder with a known etiology, treatment course, and response to treatment (Hayes et al., 1996). If it is accomplished that topography (i.e. symptoms) reveal etiology and guide treatment, then a syndrome may be conceptualized as a disease process. However, despite an increased number of categories in the DSM-IV, the link between process and function in psychological disorders has been weak (Hayes et al., 1996).
**Functional/Dimensional Classification**

An alternate approach to the conceptualization of psychological disorders as categorical is to use a functional/dimensional approach. Functional categories indicate the processes which produce or maintain the behaviors or sets of behaviors (i.e. escape/avoidance of negative emotions) (Hayes et al., 1996). Hayes and colleagues (1996) describe experiential avoidance as one functional diagnostic dimension. Hayes and colleagues (1996) define experiential avoidance as occurring “when a person is unwilling to remain in contact with particular private experiences (e.g. body sensations, emotions, thoughts, memories, behavioral predispositions)...(p. 1154). Experiential avoidance has been described as functional diagnostic dimension among the eating disorders (Heffner, Greco & Eifert, 2002; Hayes & Pankey, 2002). Heffner and colleagues (2002) describe bingeing, compensatory behaviors and excessive dieting to be behaviors whose function is avoidance of thoughts and feelings evaluated by the individual as negative and uncomfortable (i.e. anxiety and guilt experienced after eating). Research on eating disorders would theoretically support the idea that avoidance of thoughts, emotions and body sensations drives disordered eating behavior (i.e. bingeing, purging and dieting).

**Functional Relationships of Disordered Eating Behaviors**

Dieting, binge eating and purging (and other compensatory behaviors) are three overt behaviors that comprise the primary diagnostic criteria for anorexia, bulimia and binge eating. In considering experiential avoidance as a possible functional dimension across all three eating disorders, it is important to assess how disordered eating behaviors may function in relation to each other, and in relation to negative thoughts, feelings and
physical states. Research on the functional links between these three behaviors, as well as research on the etiology and risk factors for these behaviors is theoretically supportive of the concept that they may each function as experiential avoidance.

In relation to experiential avoidance, compensatory behaviors may serve as avoidance of the thoughts, feelings and body sensations that result from either an objective binge (in bulimia or binge eating disorder) or a subjective binge (in anorexia). Theoretically, eating large amounts of food (in bulimia) or what one perceives as large amounts of food (in anorexia), may trigger thoughts and feelings regarding weight, shape and associated family or socio cultural values of thinness. These standards may then be compared to the individual’s own perceived failure with dieting after a binge, and escape behavior (i.e. purging, laxative abuse or excessive exercise) may ensue. The consequence of these behaviors may be the immediate lessening of negative affect regarding the inconsistency between one’s high standards (or values) of control of food, thinness, and associated attributes, and their perceived failure at achieving those when bingeing (either subjectively or objectively). If the compensatory behavior results in weight loss or physiological sensations of food reduction, these may theoretically serve as secondary reinforcers, while experiential avoidance serves as the primary reinforcer for the compensatory behavior.

*Body Dissatisfaction*

In addition to disordered eating behaviors serving as a form of experiential avoidance, focus on body dissatisfaction to the extent that it causes distress or becomes time consuming may be conceptualized similarly. In a non-clinical sample of women over the age of twenty two, with bulimic attitudes (as measured by a widely used eating
disorders attitudes inventory), greater cognitive avoidance of materials relevant to negative emotion was measured with the emotion-stroop task (Seddon & Waller, 1999). In a comparison group of younger women (under 21 years) cognitive avoidance of both positively and negatively emotionally valenced items was shown (Seddon & Waller, 1999). This suggests a trend towards avoidance of emotion. As with clinical eating disorders, where high rates of desire for self control are evidenced (Mizes & Klegses, 1989), women in non-clinical or sub-clinical populations may exercise internal attempts to control thoughts and feelings. By focusing on thoughts related to the body, food, calories and eating, other more difficult topics (or less “controllable” events) may be avoided. In this way, cyclical efforts at dieting and chronic body dissatisfaction may serve as avoidance strategies for approaching more emotionally difficult or less personally controllable situations (such as relationships). The chronic nature of body dissatisfaction and disordered eating attitudes suggests they are being maintained by avoidance of a more unpleasant stimulus. The class of disordered eating behaviors (including the ever-increasing rise in obesity) and body dissatisfaction may be considered a class of behaviors functioning as experiential avoidance.

Summary

Research has shown that dieting, bingeing and compensatory behaviors are functionally related to one another, and that these functional relationships are not categorically bound. Dieting has been shown to trigger bingeing across anorexia, bulimia and binge eating disorders. Binging in both bulimia and binge eating disorders, has been conceptualized as escape behavior, and is empirically shown to become more likely following a dieting period. Severe calorie restriction and other types of compensatory
behaviors have been shown to function as both a method of calorie reduction and a method for weight loss following objective and subjective binges across bulimia and anorexia (binge-purge type). In addition, it may be that the class of disordered eating behaviors functions as experiential avoidance of thoughts, feelings and physiological states appraised as negative.

Acceptance and Commitment Therapy (ACT)

Assuming a common function of experiential avoidance across disordered eating behaviors, Acceptance and Commitment Therapy (ACT) would theoretically be an effective treatment for dimensions of disordered eating (i.e. binging, purging and disordered eating attitudes). Instead of using traditional psychoeducation aimed at changing existing thoughts regarding an “ideal” body weight and shape with a goal of prevention, it may be more effective to use an acceptance-based intervention to treat dimensions of disordered eating. In part, this treatment would include accepting the current perceptions and values held by a majority of women about food and weight instead of attempting to change them. While traditional models of psychopathology rely on the assumption that negative thoughts and feeling must be replaced by positive ones in treatment, the ACT perspective posits that negative emotion and cognition do not necessarily lead to negative behaviors (Wilson & Roberts, 2002). In regard to eating disorders (specifically anorexia), the ACT model targets ineffective control strategies (i.e. food restriction) and experiential avoidance of negative thoughts and feelings (i.e. thoughts and feelings that arise in the absence of the control strategy of food restriction) (Heffner, Sperry, Eifert & Detweiler, 2002).
Thus, instead of focusing on symptom reduction, ACT focuses on the role of experiential avoidance in the development of behavior, where acceptance of internal experiences and identification of values are tools for increasing the client’s capacity to live a meaningful life (Wilson & Roberts, 2002).

**ACT as Applied to Disordered Eating**

To date, there is one case study of ACT treatment for anorexia, which was shown to be successful (Heffner, Sperry, Eifert & Detweiler, 2002). Following this case study, Heffner and Eifert (2004) wrote a self-help ACT workbook for treating anorexia. The workbook guides an individual through the ACT protocol, using case examples, worksheets and activities related to dieting, body dissatisfaction and other symptoms of anorexia. The treatment manual used in the present study was adapted from Heffner and Eifert’s (2004) workbook to apply to a broader group of women struggling primarily with distress about body image.

In a 2004 article, Heffner, Greco and Eifert present a theoretical framework of how ACT may be applied to treat disordered eating behaviors. The five main components of ACT treatment are reviewed, with focus on how each may be applied to treat disordered eating behaviors. In creative hopelessness, the first stage of ACT, one goal is to normalize human suffering, and to review with the client the various behaviors they have implemented in the pursuit of ending their suffering (Hayes, Strosahl & Wilson, 1999). In terms of eating disorders, Heffner and colleagues (2004) suggest that despite trying a variety of different eating behaviors, the client is still not satisfied with their weight, shape or life in general; therefore, if the client is willing to let go of those behaviors they may experience a different result. “The key (of creative hopelessness) is to
let go of the struggle instead of adding more strategies to lose weight or to feel better about oneself” (Heffner et al. p. 19, 2004).

The second stage of ACT, control is the problem, defines the client’s experiential avoidance strategies as ineffective control strategies (Hayes et al., 1999). In relation to disordered eating, Heffner and colleagues (2004) refer to restraint theory (i.e. dieting triggers binging, and bingeing may trigger purging) as illustrative of the problematic nature of experiential avoidance. Conceptualizing disordered eating behaviors as experiential avoidance behaviors illustrates how control is illusory in eating disorders. Though individuals with anorexia, bulimia and binge eating disorders perceive themselves as controlling their weight through dieting, research shows that dieting actually leads to binging, which may lead to compensatory behaviors. Therefore, the perception of control through dieting only leads to a cycle of unhealthy behaviors. In ACT, acceptance is the intervention used to target experiential avoidance behaviors.

Acceptance is the third stage of ACT and functions to encourage acceptance instead of avoidance of thoughts, emotions and physical sensations (Hayes et al., 1999). This is counter to cognitive behavior therapy, which is aimed at changing existing thoughts. Instead of cognitive restructuring of thoughts, ACT uses the technique of observing thoughts and accepting their presence without judgment (Hayes et al., 1999). Heffner and colleagues (2004) point out that the disordered eating behaviors implemented to avoid thoughts and feelings are the problems, not the thoughts and feelings themselves. Heffner and colleagues (2004) suggest activities such as having clients view themselves in a full length mirror while noticing thoughts and feelings that occur; they also suggest clients practice “mindful eating” where awareness is focused on
physical cues for hunger and fullness. This is described as being “alternate to a binge or ‘mindless’ eating, in which a client eats so rapidly that she fails to notice the quality and quantity of food consumed” (Heffner et al., p. 19, 2004).

The final stage of ACT, identification of life values, focuses on quality of life for the client, giving a client a valued direction to work toward (Hayes et al., 1999) Heffner and colleagues (2004) use an example of an ACT client with body dissatisfaction valuing friendship, yet feeling too ugly or fat to associate with friends. In this case ACT would aim to help the client identify that she values being with friends, and to be willing to have the thoughts and feelings associated with body dissatisfaction in the service of being with her friends. Heffner and colleagues (2004) point out that dieting, bingeing and purging often lead to serious health consequences that reduce a client’s ability to interact with the world. Identifying valued relationships and activities may result in recognition that disordered eating behaviors are in contrast to the client’s valued direction; in fact, they may even be preventing the client from coming in contact with valued activities due to the impact on physical health. In ACT, identifying values provides a context for exposure to thoughts, feelings, experiences and physical sensations. In sum, Heffner and colleagues (2004) state that exposure in the context of values provides the opportunity for clients to eat (or eliminate disordered eating behaviors) not only for the sake of symptom reduction, but for the sake of symptom reduction in the service of moving in a valued direction.
Specific Aims

The goal of the proposed project is to conduct a workshop intervention using Acceptance and Commitment Therapy (ACT) to target the reduction of disordered eating attitudes (i.e. body dissatisfaction, preoccupation with weight and shape, and distress related to thoughts about eating and weight). This investigation will be compared to a wait-list control condition. The population for this investigation will be a sample of women over the age of 18 who self-identify as having high distress about their body weight and shape. Women who exhibit binging, purging, calorie restriction and other methods of weight control will be included.

The nature of this intervention is a brief workshop with the broad scope including the range of disordered eating and body image concerns which affect women. The potential benefit to creating such an intervention includes the generalization in application. The general aim is to provide participants with an introduction to the concept of experiential avoidance as it applies to their focus on body image and eating versus other life topics; to create a choice-point for participants in terms of approaching versus avoiding difficult feelings (physical and emotional) in the future; to introduce participants to the process of defusion (i.e. noticing thoughts versus being attached to the thoughts); and clarifying life values and barriers that have interfered with past pursuit of those values. In essence, behaving in accordance with one’s values versus waiting to act until the weight or body appears a certain way, will be the take-home message of the workshop.

The specific aims of the proposed project are to investigate the effectiveness of a brief ACT intervention on: reducing the frequency and distress of thoughts related to
disordered eating and body image, reducing body image related anxiety, increasing
normative eating patterns in response to moderate hunger levels and decreasing
avoidance of unpleasant emotional experiences associated with eating, weight and body
image.

The specific hypotheses with regard to the outcome of the treatment are the
following: (1) When compared to a wait-list control group, the group receiving the ACT
intervention will show less body image disturbance and less distress related to eating and
weight related thoughts (as assessed by the primary outcome measures: Physical
Appearance Trait Anxiety Scale (PASTAS), the Eating Attitudes Test (EAT-26), and the
Preoccupation With Weight and Shape Questionnaire (PEWS); (2) The ACT group will
show evidence of mindful eating. Whereas chronic dieters, and those individuals with
binge eating and bulimic symptoms typically endorse hunger and satiety at extreme
endpoints of the AAT likert scale (1-7), participants in the ACT group will endorse more
moderate responses; (3) When compared to a wait-list control group, the ACT group will
show less avoidance of unpleasant emotions associated with eating, weight and body
image as measured by the Acceptance and Action Questionnaire (AAQ), the AAQ-2 and
AAQ-W; and (4) Acceptance will be shown as a mechanism of change in the dependent
variables.

Research Design

The study was a randomized clinical trial assessing the efficacy of an Acceptance
and Commitment Therapy (ACT) based workshop on the reduction of disordered eating
features in a sample of women. Participants were randomized to either the ACT condition
(a one day workshop) or to a wait list control condition. This study was a preliminary
investigation, yielding pilot data on the effectiveness of ACT as intervention for
dimensions of disordered eating at a sub-clinical level of severity, and assessing
acceptance as a mechanism of change. The design included a wait list group for the
control condition instead of a comparative treatment group as the control; the rationale
for this was to preliminarily assess the proposed mechanism of change and collect pilot
data on the effectiveness of this intervention.

Review of Changes to the Study

The study was proposed and approved as a dissertation project in January, 2006.
Several changes to study design were implemented following that date, each with
consultation and approval of committee members and the UNR Institutional Review
Board. The changes to the study were implemented following recruitment difficulties in
the population of women with sub-clinical eating disorders. The following changes were
made in response to recruitment problems: (1) Removal of the initial diagnostic interview
component (2) removal of the classroom screening component (3) inclusion of women by
self-selection (4) inclusion of women in the greater Reno/Sparks community (and
community recruitment efforts via Reno Gazette Journal, local radio and television
advertisement) and (5) financial compensation of participants. In addition to these five
approved changes, the study was conducted only at UNR and in Reno, NV versus the
original proposed two-site comparison study at the University of Colorado, Boulder. In
accordance with the proposed plan to train doctoral-level therapists at CU, Boulder, the
principal investigator, Ms. Pearson, conducted training in Denver, Colorado during
summer, 2006 with Dr. Linda Craighead (consultant for the University of Colorado study
site) and two of her doctoral students. The training included attendance at a day-long
ACT workshop for professionals and an additional day of training on the specific ACT protocol. Ms. Pearson also conducted a day-long training at that time with an undergraduate research assistant in Dr. Craighead’s research lab at the University of Colorado. This student began recruitment efforts during summer, 2006. However, in August, 2006 Dr. Craighead took a faculty position at another university and left the University of Colorado. Given the additional recruitment difficulties occurring at both sites with use of the initial diagnostic interview, it was decided that recruitment stop at CU, Boulder while the study protocol was modified to improve recruitment efforts. A time line of changes to the study and rationale for these changes is provided below.

*Timeline for Study Recruitment and Modifications:*

**January, 2006:** Dissertation proposal is approved.

**June/July, 2006:** Staff training at CU, Boulder is conducted; Recruitment efforts begin at both UNR and CU, Boulder. Recruitment includes classroom screening using the EAT-26 (with an inclusion score of 20), followed by an initial clinical interview, using the SCID, to identify women with sub-clinical bulimia, anorexia and binge eating disorders.

**August 2006:** Dr. Craighead informs study staff she is leaving CU, Boulder; Recruitment efforts at UNR and CU, Boulder (using classroom screening followed by the initial diagnostic interview) yield minimal subjects (5 participants are recruited).

**August/September 2006:** Given that recruitment efforts at both universities did not yield enough participants to form a workshop, the initial interview component of the screening is removed with IRB and committee approval. The EAT-26 is for used for classroom screening recruitment (cut off score of 20 is maintained for inclusion criteria); Recruitment stops at CU, Boulder.
Fall Semester, 2006: Over 200 students are screened using the EAT-26 at UNR. Less than 10% score within the screening criteria range. Less than half of those students respond as interested in participating in the study, resulting in insufficient participants to form a workshop.

January/February 2007: The study protocol is modified to remove the screening component of the study, with IRB and committee approval; Use of self-selection for study inclusion, and use of screening questions to identify women with high concerns about body image and weight are approved by the committee and IRB for use in recruitment. Extension of recruitment to the Reno/Sparks community is also implemented in the protocol.

Spring Semester, 2007: The study is advertised to the community and UNR by flyer and the internet. The response does not yield enough participants to form a workshop. Therefore, modification of the protocol is approved by IRB to provide financial compensation of $50.00 to participants.

Summer 2007: The study is advertised via Reno Gazette Journal and local television and radio stations. Recruitment efforts improve, yielding 30 study participants randomized to four workshops.

Fall/Spring 2007/2008: Recruitment is completed with a sample of 73 participants and an additional four workshops conducted during spring semester, 2008. Given that the proposed sample of 60 participants was met (and exceeded) in Reno, NV, inclusion of the secondary study site was not included for the purposes of the dissertation. Challenges of Dr. Craighead not being on site at CU, Boulder were a lack of on-site supervisor, lack of on-site graduate student therapists, and lack of a research assistant. This made it
unfeasible to conduct the study at CU, Boulder for the dissertation. However, because
CU, Boulder is still IRB-approved as a study site, it may be possible to conduct a follow
up study at that institution if an on-site supervisor is identified, or if Ms. Pearson serves
as the on-site supervisor in post-doctoral research implementing the study at CU and/or
other study sites.

Impact of Modifications on Study Design

The primary point of impact resulting from the modification was that binging and
purging were not measured as a dependent variable. The sample instead is identified as a
“high concern” group of women with regard to body image and weight. The term “high
concern” has previously been used to identify women with body image distress and
disordered eating attitudes who do not meet DSM-IV criteria for an eating disorder
(Neimeier, 2004). The screening questions used to identify the population have been used
in prior studies to identify a high concern population of women (Neimier, 2006). In
addition, scores on the EAT-26, our primary dependent variable, is a widely used
measure identifying women with disordered eating pathology. Therefore, the integrity of
the study was maintained with regard to successfully identifying the population as one of
women with disordered eating symptoms.

While we included women with a range of disordered eating symptoms (binging,
purging, and restricting), the modification of excluding the diagnostic interview reduced
the specificity with which we can define the population as sub-clinical for any eating
disorder. Because the frequency of binging and purging was not assessed for inclusion
criteria, these were not able to be measured as a primary dependent variable. However,
the original proposed hypotheses remained the same. In addition, the methodology of the
study beyond the point of recruitment, and the specific ACT protocol used as the intervention, were maintained as proposed in January, 2006. The study procedure is reviewed as it was implemented in recruitment of the 73 study participants used for final data analysis.

Procedure

Participants

Seventy three female participants were enrolled in the study. Participants were recruited from the University of Nevada, Reno and from the Reno/Sparks community.

Setting:

The setting for treatment and the pre and post treatment visits was the Mack Social Sciences building on the UNR campus. The workshop was conducted in room accommodating up to 15 adults, and equipped with video recording equipment. Each workshop in the study was videotaped with consent of participants.

Recruitment and Screening:

Recruitment of participants for the study was conducted with flyers posted on the UNR campus and in the community, via television advertisement and newspaper advertisement, and by clinician recruitment at UNR Counseling Services and the UNR Student Health Center. Females age 18 or older who self-identified as having high concern about their body image were invited to participate in the workshop. Ms. Pearson’s email address was used as contact information for participants referred to the study by flyer or by clinician-referral. At the initial point of email contact, a standard email response was provided to the participant describing the nature of the study (see
appendix IV). It was requested that the potential participant respond again if they continued to be interested after the initial email. Those participants who responded with continued interest in participating were randomized by coin flip to either the wait-list control condition or the treatment (ACT) condition. At that time, a second standardized email (see appendix I) was sent with at least two options for workshop dates.

If the participant was in the wait-list control condition, the first appointment they attended was one hour in length, and included completion of standardized questionnaires. Measures at this visit were considered the “pre” or “baseline” measures. If the participant was in the treatment (ACT) condition, the first appointment was also an hour in length, but occurred on the day of the workshop, prior to the start of the workshop. Participants completed the same standardized questionnaires in that hour, also considered the “pre” or “baseline” measurement time. At that initial appointment, all participants answered two screening questions: “How concerned are you about your body image and/or weight” and (2) “Compared to your peers, how concerned are you about your body image and/or weight”. These questions were answered on a five point likert scale with 1 being “not at all concerned”, 2 being “somewhat concerned”, 3 being “moderately concerned”, 4 being “very concerned” and 5 being “extremely concerned”. This measure was used by Neimeier (2004) to recruit a college sample of women with disordered eating behaviors at a sub-clinical level, which was identified by Neimeier as a population with “high concern” about their body image. Participants scoring an average above 3 on the two questions were identified as a high concern group, and included in data analysis for the primary hypotheses. Thirteen individuals who endorsed lower concern were not used in
data analyses for the primary hypotheses. However, they were included in a secondary analysis of the entire sample.

Follow Up Assessment:

Individuals who elected to participate in the study were randomized to either the ACT condition or a wait-list control condition. Participants in the wait-list control condition attended two, once weekly 30 minute follow up appointments after the initial hour-long initial visit. During the first visit, participants completed a series of standardized questionnaires (PEWS, PASTAS, BDI, BAI, EAT-26, AAQ, AAQ-W, AAQ-2, MAC, TCQ, EDI-II) and were instructed on Appetite Awareness monitoring. They then completed the self-monitoring for one week. At one week, they returned and completed the standardized repeated measures. (PEWS, PASTAS, BDI, BAI, EAT-26, AAQ, AAQ-W, AAQ-2). One week later, they returned on the day of their scheduled workshop and completed another set of the same repeated standardized measures. Following that, they participated in the same workshop offered to the treatment group. Immediately following the workshop, they were instructed to complete a final packet of the standardized repeated measures.

Participants in the treatment group attended their initial appointment the day of the scheduled workshop and completed the initial standardized measures. Prior to the workshop, after completion of those questionnaires, they were instructed on AAT monitoring, and then participated in the workshop. Following the workshop, participants in the treatment group completed a post-workshop packet of standardized questionnaires. They monitored hunger, satiety, binging and purging for one week, and attended their
first follow up visit at one week post-workshop to complete the repeated measures packet of standardized questionnaires. At week two post-workshop, they attended a second appointment during which they completed the same repeated measures packet. Figure 1 (page 41) illustrates the study design for the treatment group and control group.
Full Sample: 73

Randomized

Wait List
Control Group=39

Initial Appointment:
1. Completed Standardized Measures (EDI-II, MACS, TCQ, EAT-26, PASTAS, BDI, BAI, PEWS, AAQ, AAQ-2, AAQ-W)
2. Appetite Awareness Monitoring Instructions

ACT Group=34

Initial Appointment:
1. Completed Standardized Measures (EDI-II, MACS, TCQ, EAT-26, PASTAS, BDI, BAI, PEWS, AAQ, AAQ-2, AAQ-W)
2. Appetite Awareness Monitoring Instructions

ACT Workshop
1. Completed Post workshop standardized questionnaires (i.e. EAT-26, TCQ, PASTAS, BDI, BAI)

Follow up visit 1:
1. Return monitoring packet
2. Complete EAT-26, TCQ, PASTAS, PEWS, BDI, BAI, the AAQs

Follow up visit 2:
1. Return monitoring packet
2. Complete EAT-26, TCQ, PASTAS, PEWS, BDI, BAI, the AAQs

ACT Workshop
1. Completed Post workshop standardized questionnaires (i.e. EAT-26, TCQ, PASTAS, BDI, BAI)

Follow up visit 1:
1. Return monitoring packet
2. Complete EAT-26, TCQ, PASTAS, PEWS, BDI, BAI, the AAQs

Follow up visit 2:
1. Return monitoring packet
2. Complete EAT-26, TCQ, PASTAS, PEWS, BDI, BAI, the AAQs

N=28 Subjects completed study
N=26 Subjects included in the high concern sample.

N=29 Subjects completed study
N= 22 Subjects included in the high concern sample.

13 low concern Subjects omitted
Appetite Awareness Monitoring

Instructions for self monitoring, and the model of self-monitoring used in this study is based on the Appetite Awareness Training Manual (Craighead, 2006). During treatment, all participants self-monitored for one week using Appetite Awareness Self-Monitoring. This is an adapted form of AAT monitoring originally developed by Dr. Linda Craighead. The adaptation was approved by Dr. Craighead and included removal of instructions to stay within a certain “safe” range of hunger and fullness on a likert scale of 1-7 (1= very hungry/7=very full). Instead, participants were instructed to “just notice” how hungry they were before eating, and how full they were after eating and mark that accordingly on the likert scale. Participants were also instructed to indicate the number of “binge” and “purge” episodes daily. A binge was defined subjectively as anytime the participant had the thought or feeling that they had eaten “too much” at one eating event. A purge episode was defined to include self-induced vomiting and other compensatory behaviors, including excessive exercise (of more than 3 hours), laxative use for the purpose of calorie reduction, and use of stimulant substances for the purpose of burning calories or suppressing hunger. The rationale for the monitoring was described to wait-list control participants in written instructions and verbal instructions so that the process of monitoring may increase awareness of hunger and fullness. Participants were told to not purposefully change their eating during monitoring. Participants in the wait-list control group monitored for one week then had another week without monitoring prior to participation in the workshop. Participants in the treatment group received the same written and verbal instructions for AAT monitoring, which were provided prior to
the beginning of the workshop. Subsequently, participants in the treatment group monitored for one week following the workshop.

*Intervention:*

The workshop protocol was a day-long (8 hour) workshop using Acceptance and Commitment Therapy. This is an original protocol written by Ms. Pearson, which applies Acceptance and Commitment Therapy to target dimensions of disordered eating pathology, specifically disordered eating attitudes (i.e. over concern about weight and shape, body dissatisfaction, obsessive thoughts related to eating and weight, and distress related to thoughts about eating and weight). The treatment protocol follows the components of Acceptance and Commitment Therapy as developed by Hayes and colleagues (1994). Some handouts and therapy exercises in the workshop were adapted, with permission, from Dr. Michelle Heffner’s (2004) Anorexia Workbook. Other handouts and therapy exercises were developed by Ms. Pearson.

*Components of ACT and Corresponding Workshop Activities*

Several activities/exercises were provided for each component of Acceptance and Commitment Therapy, and the workshop was split into segments based on those therapy components. Several activities for each component allowed for some flexibility in administration of the workshop, based on individual differences of participants and co-facilitators. An overview of the activities/exercises and corresponding components is provided below.
Staff and Staff Training

The primary investigator (Ms. Pearson) and other doctoral students in the UNR clinical psychology program were co-therapists for this study. In prior ACT research studies successful training of therapists was achieved with a 30 hour experiential training (ACT workshop) followed by 15 hours of training on the specific protocol and audiotapes of ACT sessions. The primary investigator, Ms. Pearson, is a sixth year doctoral student in the clinical psychology program. She has had two years of supervised clinical training in individual and group psychotherapy within the doctoral training program, and an additional three years of externship clinical training. As part of her clinical training in the doctoral program, Ms. Pearson has attended a two day ACT workshop where she received intensive training in ACT therapy. She has also received clinical training in ACT on Dr. Hayes ACT supervision team at UNR. The co-therapists on this project were also clinical psychology doctoral students with equivalent training (at least one to two years in the doctorate program and ACT-trained), and one was a Master’s level therapist and recent graduate of the Master’s program in Counseling Psychology. In addition, all co-therapists received specific training on the study ACT protocol for disordered eating. All therapists were supervised by Dr. Victoria Follette who has extensive training and experience as an ACT therapist. Dr. Steven Hayes, the developer of ACT, served as a clinical consultant to the study.

The first four workshops were conducted in August, 2007. The first workshop was conducted by Ms. Pearson alone, and the third workshop was conducted by another graduate student alone, who had been trained on the protocol. This change was due to illness of the primary therapist. The remaining six workshops were conducted by Ms.
Pearson and alternating co-therapists, each of whom had received clinical training in ACT and had also received specific training by Ms. Pearson on use of the workshop manual.

Subject Compensation:

Participants were compensated with $50.00 cash. They received $25.00 at the end of the workshop (if in the treatment group), or at the end of their initial appointment (if in the wait-list control group). They received the second $25.00 at the completion of the study.

Standardized Measures

**Beck Anxiety Inventory-II (BAI-II)** (Beck, Epstein, Brown & Steer, 1988) The BAI is a reliable, valid and widely used measure assessing general levels of anxiety. This will be used pre and post intervention and as a bi-monthly repeated measure in the treatment phase of the present study and at follow up.

**Beck Depression Inventory-II (BDI-II)** (Beck, 1996) The BDI-II is a reliable, valid and widely used measure assessing general levels of depression. The BDI-II will be administered at pre and post assessment, on a bi-weekly basis during intervention, and at follow up assessments.

**Preoccupation with Eating, Weight, and Shape Scale** (PEWS; Craighead & Niemeier, 2001). The PEWS is an 8-item self-report scale, developed to assess preoccupations with food and eating, and weight and shape. It assesses the frequency and distress of thoughts about food and eating or weight and shape. The PEWS has been used with female college students, women with BED, and women with BN, and has been shown to have high
internal consistency, concurrent and discriminate validity, and sensitivity to change (Niemeier, Craighead, Pung, & Elder, 2002). The PEWS was administered at pre and post assessment, on a bi-weekly basis during intervention, and at follow up assessments.

**Appetite Awareness self monitoring forms** (Craighead, 2006): These self monitoring forms were used to monitor hunger and satiety on a seven point Likert scale and to endorse the number of binge/purge episodes. Lower scores on the Likert scale indicate hunger, and higher scores indicate fullness or satiety. A ranking of four indicates neither hungry nor full. This measure will be used daily for one week pre and post in the present study.

**Eating Disorders Inventory-II (EDI-II)** (Garner, 1991) The EDI-II is a reliable and valid 91 item self report measure assessing symptomology and diagnostic criteria for anorexia and bulimia. Items are ranked on a scale of Always, Usually, Often, Sometimes, Rarely or Never. The EDI-II will be administered once at the initial appointment to assess participants on diagnostic criteria and symptoms relevant to eating disorders.

**Eating Attitudes Test (EAT-26)** (Garner, Olmsted, Bohr, & Garfinkel, 1982). The EAT-26 is a 26 item self-report questionnaire assessing maladaptive eating attitudes and behaviors in both adolescent and adult populations, including binging, purging, calorie restriction and disordered eating attitudes. This questionnaire will be administered as a repeated measure of disordered eating pathology in the study.

**Mizes Anorectic Cognitions Scale (MACS)** (Mize & Klegses, ): The MACS is a 33-item self-report questionnaire assessing attitudes and symptoms related to eating disorders. Responses are endorsed on a five point Likert scale where 1=strongly disagree, and 5=strongly agree.
Physical Appearance State and Trait Anxiety Inventory- State Version (PASTAS-S) (Reed, Thompson, Brannick & Sacco, 1991). The PASTAS is a reliable and valid 15 item self-report measure of body anxiety, which specifies anxiety levels about certain body parts (hips, waste, legs, arms). Items are ranked on a five point scale where zero is not at all anxious and four is extremely anxious. The state version specifies how anxious one is feeling “right now” with regard to their body. The PASTAS was used as a repeated outcome measure in this study.

Thought Control Questionnaire (TCQ) (Wells & Davies, 1994): The TCQ is a 30-item self-report questionnaire measuring individual differences in responses to unwanted thoughts. Responses to items are indicated on a 4 point Likert scale of “never” to “almost always”. The TCQ was used as a repeated outcome measure in this study.

Measures Assessing Acceptance and Experiential Avoidance:

Three versions of the Acceptance and Action Questionnaire were used in the study. The AAQ was scored to assess level of acceptance, while the AAQ-2 scores yielded levels of experiential avoidance. The AAQ-W measured psychological flexibility related to statements about body image, eating and weight.

Acceptance and Action Questionnaires (AAQ-2) (Bond, F.W., Hayes, S.C., Baer, R.A., Carpenter, K.M., Orcutt, H.K., Waltz, T. & Zettle, R.D. (Submitted) ) The AAQ-2 is a 10 item questionnaire that has an overall score for acceptance/willingness. Higher scores indicate greater psychological flexibility or acceptance. Lower scores indicate greater experiential avoidance. This version of the AAQ-2 has been shown to have high correlations with the AAQ.
Acceptance and Action Questionnaire (AAQ) (Bond & Bunce, 2004). The AAQ is a sixteen item questionnaire which yields an overall score which measures acceptance. The measure has subscales for willingness to experience difficult private events and the ability to act in the presence of difficult private events. The items are ranked on a seven point likert scale. Higher scores indicate greater willingness, and lower scores indicate greater experiential avoidance. This will be used as a repeated measure in the study.

Acceptance and Action Questionnaire for Weight (AAQ-W) (Lillis & Hayes, 2006). The AAQ-W is a 22-item self-report questionnaire assessing willingness to connect with undesirable thoughts and feelings, specifically related to weight and eating related topics. It is designed for the purpose of assessment in the context of weight loss or weight maintenance.

Results

Sample Characteristics:

Seventy-three female participants enrolled in the study and completed the baseline standardized questionnaires, and fifty six participants completed the study. Twenty-eight participants completed the study in the wait-list control condition and twenty six participants completed the study in the treatment condition. Seventeen participants either dropped out or did not complete the study from the point of enrollment. This left fifty-six participants who completed the baseline standardized questionnaires, at least one weekly appointment of two (in the wait-list control group) or at least one weekly follow up appointment (in the treatment group), the workshop and post workshop day assessment.
**Prescreen Questions and Sample Size**

Sixty participants of the total sample of seventy-three scored an average greater than 3 on the first two screening questions relating to distress about body image. Forty six of those participants completed the study. Of the thirteen participants eliminated from initial analysis due to low screening scores, ten of those scored an average of 3; one person averaged 2.5, one averaged 2 and one person averaged a 1.5 on the two screening questions. In analyses eliminating participants scoring a 3 or less on screening questions, data from forty-six participants were analyzed and are presented as the primary analysis in the study. A second analysis was conducted using the entire sample of fifty-six completers. Given that analyses for the partial and full samples were not significantly different, descriptive statistics and correlations on standardized measures for the full study sample are presented. Table 1 reviews the two different samples.

**Table 1**

Sample Size, Prescreen and Attrition

<table>
<thead>
<tr>
<th></th>
<th>Full Sample</th>
<th>ACT</th>
<th>N=73</th>
<th></th>
<th>ACT</th>
<th>Waitlist Control</th>
<th>N=34</th>
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<td></td>
<td>HC-ACT</td>
<td>N=60</td>
<td></td>
<td>HC-Waitlist Control</td>
<td>N=31</td>
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<td>Sample (HC) (Ave.Prescreen &gt;3)</td>
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<tr>
<td>Completers</td>
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<tr>
<td>(Full Sample)</td>
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<td></td>
<td>N=48</td>
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<tr>
<td>Attrition</td>
<td></td>
<td>ACT</td>
<td>N=13</td>
<td></td>
<td>Wait-list Control</td>
<td>N=4</td>
<td></td>
</tr>
<tr>
<td>(Full Sample)</td>
<td></td>
<td></td>
<td>N=9</td>
<td></td>
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</tr>
</tbody>
</table>
Attrition

One participant in the treatment condition dropped out following the workshop due to dissatisfaction with the study. Specifically, the participant completed the workshop but disliked workshop exercises which included group discussion or those that entailed sharing with a partner. She expressed a desire to not return for the follow up appointments. Two participants in the treatment condition left the workshop during the day before it was over due to scheduling conflicts. Four participants in the treatment condition did not return for one and two week follow up appointments. Three participants in the treatment group were unable to reschedule attendance at a workshop that was cancelled due to facility problems (a power outage), and therefore did not complete the study. Four participants in the wait-list control condition did not return following completion of initial paperwork for their one and two week appointments.

Descriptive Statistics:

Tables 2A and 2B show the means and standard deviations for the both groups on standardized measures administered at pre-test, and the comparisons between groups on baseline measures. Table 2A shows means and between group comparisons for measures administered only at the initial study appointment. Table 2B shows pretest/baseline means and between groups comparisons for repeated measures, which were administered at pre-test, post workshop and follow up.
Table 2A
Scores for Measures Administered At Baseline Only and Between Group Comparisons (Full Sample)

<table>
<thead>
<tr>
<th>Measure</th>
<th>ACT</th>
<th>SD</th>
<th>Control</th>
<th>SD</th>
<th>Comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(N=34)</td>
<td></td>
<td>(N=39)</td>
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<tr>
<td>Age</td>
<td>42.4</td>
<td>41.1</td>
<td>44.4</td>
<td>15.5</td>
<td>t=-.57  p=.56</td>
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<tr>
<td>Weight</td>
<td>183.6</td>
<td>38.5</td>
<td>173.8</td>
<td>37.6</td>
<td>t=.87   p=.39</td>
</tr>
<tr>
<td>Height</td>
<td>64.9</td>
<td>3.5</td>
<td>65.3</td>
<td>2.4</td>
<td>t=.67   p=.50</td>
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<tr>
<td>BMI</td>
<td>30.1</td>
<td>6.3</td>
<td>28.5</td>
<td>5.4</td>
<td>t=-1.2  p=.25</td>
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<td>Average Rating Of Body Image</td>
<td>3.9</td>
<td>.64</td>
<td>3.9</td>
<td>.88</td>
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<td>Distress (Prescreen)</td>
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<td></td>
</tr>
<tr>
<td>Eating Disorders Inventory</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>(EDI)</td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>(N=34)</td>
<td></td>
<td>(N=39)</td>
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<td></td>
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<tr>
<td>EDI-DT (Desire for Thinness)</td>
<td>9.1*</td>
<td>4.8</td>
<td>10.4*</td>
<td>4.9</td>
<td>t=1.1   p=.26</td>
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<tr>
<td>EDI-Bulimia</td>
<td>3.4*</td>
<td>4.3</td>
<td>3.1*</td>
<td>3.1</td>
<td>t=-.36  p=.72</td>
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<tr>
<td>EDI-Body Dissatisfaction</td>
<td>18.1*</td>
<td>6.5</td>
<td>19.3*</td>
<td>6.9</td>
<td>t=.76   p=.45</td>
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<tr>
<td>EDI-Ineffectiveness</td>
<td>5.9</td>
<td>5.2</td>
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<td>t=-.36  p=.71</td>
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<td>EDI-Interpersonal</td>
<td>7.6</td>
<td>4.7</td>
<td>6.5</td>
<td>4.5</td>
<td>t=-.97  p=.33</td>
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<td>EDI-Interpersonal Awareness</td>
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<td>5.9</td>
<td>4.8*</td>
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<td>t=.09   p=.93</td>
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<td>EDI-Maturity Fears</td>
<td>3.5</td>
<td>4.9</td>
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<td>4.4</td>
<td>t=.09   p=.93</td>
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<tr>
<td>EDI-Asceticism</td>
<td>4.7</td>
<td>2.6</td>
<td>4.5</td>
<td>2.9</td>
<td>t=.29   p=.77</td>
</tr>
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<td>EDI-Impulse Regulation</td>
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<td>4.5</td>
<td>2.9</td>
<td>t=.29   p=.77</td>
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<td>EDI-Social Insecurity</td>
<td>4.8</td>
<td>3.5</td>
<td>5.6</td>
<td>3.4</td>
<td>t=.91   p=.84</td>
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<tr>
<td>Eating Disorder Cognitions (MAC)</td>
<td>97.3</td>
<td>17.6</td>
<td>97.7</td>
<td>20.9</td>
<td>t=.09   p=.93</td>
</tr>
</tbody>
</table>

*p<.05= one SD above pop. mean
**p<.01= two SDs above pop. mean
***p<.001=three SDs above pop. mean
### Table 2B
Baseline Scores for Repeated Measures and Between Group Comparisons (Full Sample)

<table>
<thead>
<tr>
<th>Measure</th>
<th>ACT (N=34)</th>
<th>SD</th>
<th>Control (N=39)</th>
<th>SD</th>
<th>Comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disordered Eating Pathology (EAT-26)</td>
<td>15.2*</td>
<td>9.5</td>
<td>16.7*</td>
<td>8.9</td>
<td>t= .71 p=.48</td>
</tr>
<tr>
<td>Body Anxiety (PASTAS)</td>
<td>31.6*</td>
<td>9.9</td>
<td>29.9*</td>
<td>7.5</td>
<td>t=-.76 p=.45</td>
</tr>
<tr>
<td>Depression (BDI)</td>
<td>17.5</td>
<td>10.8</td>
<td>16.1</td>
<td>10.6</td>
<td>t=-.55 p=.59</td>
</tr>
<tr>
<td>Anxiety (BAI)</td>
<td>11.3</td>
<td>10.8</td>
<td>9.9</td>
<td>8.6</td>
<td>t=.57 p=.57</td>
</tr>
<tr>
<td>Thought Control Questionnaire (TCQ)</td>
<td>62.9</td>
<td>9.6</td>
<td>62.1</td>
<td>8.5</td>
<td>t=-.39 p=.69</td>
</tr>
<tr>
<td>AAQ</td>
<td>68.2</td>
<td>10.8</td>
<td>67.7</td>
<td>11.8</td>
<td>t= -.19 p=.85</td>
</tr>
<tr>
<td>AAQ-2</td>
<td>45.5</td>
<td>12.2</td>
<td>45.4</td>
<td>12.9</td>
<td>t=-.03 p=.97</td>
</tr>
<tr>
<td>AAQ-W</td>
<td>83.7</td>
<td>16.6</td>
<td>84.2</td>
<td>21.8</td>
<td>t=.11 p=.92</td>
</tr>
<tr>
<td>Distress about Thoughts related To Weight and Shape (PEWS)</td>
<td>20.1</td>
<td>7.8</td>
<td>19.6</td>
<td>7.7</td>
<td>t= -.25 p=.80</td>
</tr>
<tr>
<td>Frequency of Thoughts related to Weight and Shape (PEWS) (%=percentage of day)</td>
<td>44%</td>
<td>24%</td>
<td>55%</td>
<td>25%</td>
<td>t= 1.7 p=.09</td>
</tr>
</tbody>
</table>

* = one SD above pop. mean  
** = two SDs above pop. mean  
*** = three SDs above pop. mean

T-tests revealed no significant differences between the ACT and control groups on standardized measures administered at pre-test, showing random assignment to group to have been successful. Participants were all female, with an average age of 43 (range 18-68) across the entire sample. The average body mass index (BMI) in each group was 28.5(control) and 30 (ACT) which is considered to be in the overweight to obese range (obese=BMI at 30 or higher), as defined by the U.S. Department of Health and Human Services, National Institutes of Health (2007).
Sample Characteristics on Eating Disorders Measures

The sample scored above the population mean for women identified as “high risk” (as defined by Orbitano, Ciaro & Corsarro et al., 2006) for eating disorders on the Eating Attitudes Test (EAT-26), which is a widely used measure assessing symptoms of eating disorders. The EAT-26 has been used in several studies with college student samples, where typically a score of 20 is used as a cut-off score for identifying clinical samples. However, Orbitano and colleagues (2006) investigated the diagnostic validity of the EAT-26 in a sample of overweight women, over age 18, at risk for binge eating disorder and bulimia (patients at a nutrition center). Results showed that using the cut-off score of eleven increased validity and decreased false negatives in diagnoses of eating disorders. The sample in the present study scored a 15.2 (ACT) and 16.7 (control) at baseline, supporting that the sample was at high risk for an eating disorder based on the EAT-26.

The Physical Appearance State and Trait Anxiety Scale (PASTAS), a measure assessing anxiety related to specific areas of the body, measuring body dissatisfaction, also showed scores on average above the published mean of non-clinical female samples (Reed, Thompson & Brannick, 1991).

The Eating Disorders Inventory-2 (EDI-2; Garner, Olmstead) and the Mizes Anorectic Cognitions Scale (MAC; Mizes & Klegses, 1989) are two widely used and validated measures of eating disorders symptoms. These measures were administered to all participants once at baseline. Means for the subscales, Drive for Thinness, Body Dissatisfaction, Bulimia and Interpersonal Awareness were compared to a study by Lewis and Cachelin (2001) where means on these scales were examined across cohorts of middle-aged and older women, and in cohorts of underweight, normal weight and obese
women. Means for these subscales were most applicable to examine in the present study, given the study sample and the targets of body dissatisfaction and disordered eating attitudes. Because our sample was mixed with regard to age and weight, it was not possible to reliably compare the mean of the sample to the published mean of a single sample (i.e. college women or bulimic women). However, the study by Lewis and Cachelin (2001), which examined rates of body dissatisfaction among middle aged and older women, most closely matched the sample in this study. When comparing the means of these subscales to those of normal weight women in the study by Lewis and Cachelin (2001), each were one standard deviation above the mean. The subscales were also approximately one standard deviation above means shown in non-clinical female samples of college aged women (VanStrien & Ouwens, 2003) and in the sample of middle aged and older women presented by Lewis & Chachelin (2001). Subscale scores on the EDI-2 were consistent with means in a sample of overweight and obese women (Lewis & Cachelin, 2001). Means for all subscales of the EDI-2 are presented in Table 2A. Both groups averaged total scores of 97 on the Mizes Anorectic Cognitions Scales. This score is above the published mean of 80.36 (SD 20.24) for overweight females and a sample of normal weight females (81.05; SD 23.58) (Mizes & Klesges, 1989).

Correlation Analyses

Correlation analyses were conducted with the standardized measures administered at baseline, and the three Acceptance and Action Questionnaires administered at baseline. Tables 3, 4 and 5 present baseline correlations with the 16-item two factor AAQ, the 10 item AAQ 2 and the AAQ-Weight. The 16-item two factor AAQ was scored using the method validated by Bond and Bunce (2004) on a non-clinical population. Acceptance
was the variable of interest in the study as a mediator, and the two factor version of the AAQ has a factor measuring willingness specifically, and one measuring behavioral action. These were analyzed separately as well as analyzed as a combined score. The factor measuring behavioral action did not yield significant results; the factor measuring willingness yielded the same results as when the two scales were combined and analyzed together.

Table 3

<table>
<thead>
<tr>
<th>Measures</th>
<th>AAQ</th>
<th>AAQ-2</th>
<th>AAQ-W</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression (BDI)</td>
<td>-.52**</td>
<td>-.31*</td>
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</tr>
<tr>
<td>Anxiety (BAI)</td>
<td>-.53**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PEWS-Distress</td>
<td>-.44**</td>
<td>-.36**</td>
<td></td>
</tr>
<tr>
<td>PEWS-Frequency</td>
<td>-.31*</td>
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<tr>
<td>EDI-Bulimia</td>
<td>-.34**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EDI-Interpersonal Distrust</td>
<td>-.58**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EDI-Ineffectiveness</td>
<td>-.56**</td>
<td>-.32*</td>
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<tr>
<td>EDI-Interpersonal Awareness</td>
<td>-.47**</td>
<td></td>
<td></td>
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<tr>
<td>EDI-Social Insecurity</td>
<td>-.51**</td>
<td>-.35*</td>
<td>-.25*</td>
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<tr>
<td>EDI-Asceticism</td>
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<td>-.34*</td>
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<td>EDI-Desire for Thinness</td>
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<td>-.25*</td>
</tr>
<tr>
<td>Mizes Anorectic Cognitions</td>
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<tr>
<td>Scale (MAC)</td>
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<td>-.55**</td>
</tr>
<tr>
<td>Thought Control Questionnaire (TCQ)</td>
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<td>-.27*</td>
<td></td>
</tr>
<tr>
<td>AAQ-W</td>
<td>.62**</td>
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</tr>
<tr>
<td>AAQ-2</td>
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<td>-.29*</td>
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<td>EAT-26</td>
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</tr>
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</table>

*p<.05 **p<.01 ***p<.001

Each AAQ measure showed significant correlations with different measures, and showed some overlap in correlations with some of the same measures. High scores on all AAQ measures indicated greater levels of psychological flexibility, or acceptance/willingness. The AAQ-W showed correlations with most of the measures assessing eating disorders symptoms, where high scores showed a negative relationship with levels of eating disorder symptoms. The AAQ-2 is a 10-item questionnaire; while
the AAQ is a 16 item questionnaire. The results of correlation analyses with these measures revealed that the AAQ showed stronger correlations with more EDI-2 subscales and with measures of anxiety and depression than did the AAQ-2. However, the AAQ-2 showed a significant negative relationship with the TCQ, which assesses efforts to control thoughts, while the AAQ did not. All significant correlations with the AAQ and AAQ-2 indicated a negative relationship between various symptoms of psychological distress (anxiety, depression, disordered eating) and acceptance.

*Treatment outcome assessment:*

Table 4 reports the means and standard deviations at baseline and follow up (i.e. the average of weeks one and two evaluation). The “Pre-Workshop” column in Table 4 refers to the measurement period at the initial visit for all participants, also referred to as “baseline” in this study. The “Follow Up” column in table 6 refers to the two points of data collection, occurring one week apart, which were averaged. For the control group, these two weeks were assessed without treatment (i.e. prior to the workshop being offered to them); for the treatment (ACT) group the two weeks occurred post-workshop to assess the impact of intervention. The “Change” column in Table 4 refers to the change in both groups that occurred between the initial assessment and the period of two weeks of measurement (with or without treatment depending on condition). The adjusted mean accounts for the pre-test or baseline assessment being factored out of the Analysis of Covariance that was conducted. Within and between group Cohen’s ds are also reported for both groups in Table 4.
Table 4

Descriptive Statistics by Group for Primary Outcome Measures (With Full Sample)

<table>
<thead>
<tr>
<th>Measure</th>
<th>Pre M</th>
<th>Pre SD</th>
<th>Follow up M</th>
<th>Follow up SD</th>
<th>Change* M</th>
<th>Adjusted M</th>
<th>Within Group d</th>
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<td>15.2</td>
<td>9.5</td>
<td>10.7</td>
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<td>.51</td>
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<tr>
<td><strong>Thought Control Questionnaire (TCQ)</strong></td>
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<td>61.4</td>
<td>9.2</td>
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<td><strong>Distress about Eating And Body Image related Thoughts (PEWS)</strong></td>
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<td></td>
</tr>
<tr>
<td>ACT</td>
<td>20.1</td>
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<td>17.3</td>
<td>7.0</td>
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<td>.38</td>
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<tr>
<td><strong>Frequency of Eating And Body Image Related Thoughts (PEWS)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACT</td>
<td>.44</td>
<td>.24</td>
<td>.39</td>
<td>.24</td>
<td>.36</td>
<td>.36</td>
<td>.21</td>
</tr>
<tr>
<td>Control</td>
<td>.55</td>
<td>.24</td>
<td>.56</td>
<td>.24</td>
<td>.54</td>
<td>.54</td>
<td>-.04</td>
</tr>
<tr>
<td>Between Groups d</td>
<td>-.46</td>
<td></td>
<td>-.71</td>
<td></td>
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</tr>
</tbody>
</table>

*p<.05 (as shown by t-test)

Within d=the within group Cohen’s d for differences between pre and follow up measures.

*Change Column: negative number=a decrease in means/positive number=increase in means
Following two weeks of evaluation, and one week of self-monitoring with no treatment, the wait-list control participants were offered the same ACT workshop as participants in the treatment group. All participants completed standardized measures immediately following the workshop day. These post-workshop scores were compared between groups to assess for internal validity in the study. Table 5 shows means, standard deviations and t-test results evaluating differences between groups on standardized measures at post-workshop.

**Table 5**

T-tests assessing differences between groups at Post Workshop Evaluation (Full Sample)

<table>
<thead>
<tr>
<th>Measure</th>
<th>Post WS</th>
<th>t</th>
<th>p (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Eating Attitudes (EAT-26)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACT</td>
<td>M 11.2</td>
<td>SD 9.6</td>
<td>-0.44</td>
</tr>
<tr>
<td>Control</td>
<td>M 10.2</td>
<td>SD 8.1</td>
<td></td>
</tr>
<tr>
<td><strong>Body Anxiety (PASTAS)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACT</td>
<td>M 25.3</td>
<td>SD 10.6</td>
<td>-0.65</td>
</tr>
<tr>
<td>Control</td>
<td>M 23.4</td>
<td>SD 10.7</td>
<td></td>
</tr>
<tr>
<td><strong>Depression (BDI)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACT</td>
<td>M 12.9</td>
<td>SD 11.9</td>
<td>-1.5</td>
</tr>
<tr>
<td>Control</td>
<td>M 8.8</td>
<td>SD 5.4</td>
<td></td>
</tr>
<tr>
<td><strong>Anxiety (BAI)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACT</td>
<td>M 9.4</td>
<td>SD 8.8</td>
<td>-1.9</td>
</tr>
<tr>
<td>Control</td>
<td>M 5.4</td>
<td>SD 5.4</td>
<td></td>
</tr>
<tr>
<td><strong>Thought Control Questionnaire (TCQ)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACT</td>
<td>M 61.5</td>
<td>SD 10.0</td>
<td>-0.82</td>
</tr>
<tr>
<td>Control</td>
<td>M 59.3</td>
<td>SD 9.1</td>
<td></td>
</tr>
</tbody>
</table>
Table 5

Distress about Eating And Body Image related Thoughts (PEWS)

<table>
<thead>
<tr>
<th></th>
<th>ACT</th>
<th>SE</th>
<th>T</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>19.4</td>
<td>7.5</td>
<td>-1.7</td>
<td>.10</td>
</tr>
<tr>
<td>Control</td>
<td>15.9</td>
<td>8.0</td>
<td></td>
<td></td>
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</tbody>
</table>

Frequency of Eating And Body Image Related Thoughts (PEWS)

<table>
<thead>
<tr>
<th></th>
<th>ACT</th>
<th>SE</th>
<th>T</th>
<th>p</th>
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<tr>
<td></td>
<td>.45</td>
<td>.25</td>
<td>.005</td>
<td>.10</td>
</tr>
<tr>
<td>Control</td>
<td>.44</td>
<td>.25</td>
<td></td>
<td></td>
</tr>
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</table>

Acceptance and Action Questionnaire (AAQ)

<table>
<thead>
<tr>
<th></th>
<th>ACT</th>
<th>SE</th>
<th>T</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>71.0</td>
<td>9.9</td>
<td>-0.8</td>
<td>.94</td>
</tr>
<tr>
<td>Control</td>
<td>70.7</td>
<td>10.9</td>
<td></td>
<td></td>
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</tbody>
</table>

Acceptance and Action Questionnaire-2/10-item (AAQ-2)

<table>
<thead>
<tr>
<th></th>
<th>ACT</th>
<th>SE</th>
<th>T</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>48.3</td>
<td>10.3</td>
<td>.09</td>
<td>.93</td>
</tr>
<tr>
<td>Control</td>
<td>48.6</td>
<td>12.4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Acceptance and Action Questionnaire-Weight (AAQ-W)

<table>
<thead>
<tr>
<th></th>
<th>ACT</th>
<th>SE</th>
<th>T</th>
<th>p</th>
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<tbody>
<tr>
<td></td>
<td>97.1</td>
<td>19.2</td>
<td>.09</td>
<td>.92</td>
</tr>
<tr>
<td>Control</td>
<td>98.0</td>
<td>34.9</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p<.05
No significant differences were shown between groups at post-workshop, with the exception of differences in general anxiety (as measured by the BAI). T-tests were also conducted with the high concern sample, showing no significant differences between groups at post-workshop evaluation, including no difference in general anxiety. Overall, these results indicate good internal validity within the study. Specifically, the period of evaluation in the control group (one week of self-monitoring plus two one week intervals of measurement) did not create significant changes.

Analysis of Co-variance assessing differences between groups on primary dependent variables was conducted for with follow up data (i.e. averages of weeks one and two) between groups. Pre-test (baseline) data was the covariate. Analysis of co-variance was computed on data averaged from week one and week two evaluations to account for participants who missed a session but were still included in data analysis. Analysis of co-variance was also conducted with data at weeks one and two separately; however, no significant difference was shown in analyzing those weeks separately versus analyzing an average of the two weeks. The analysis with the averaged data for both weeks is shown in Table 6 on page 52.
Table 6

Between group ANCOVAs for subjective outcomes (with High Concern sample)

<table>
<thead>
<tr>
<th>Measure</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>Partial η²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disordered Eating Pathology (EAT-26)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline Score</td>
<td>1</td>
<td>2109.8</td>
<td>67.2**</td>
<td>.60</td>
</tr>
<tr>
<td>Condition</td>
<td>1</td>
<td>430.1</td>
<td>3.7**</td>
<td>.23</td>
</tr>
<tr>
<td>Anxiety about Body Shape (PASTAS)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline Score</td>
<td>1</td>
<td>1079.5</td>
<td>23.2**</td>
<td>.37</td>
</tr>
<tr>
<td>Condition</td>
<td>1</td>
<td>256</td>
<td>5.5*</td>
<td>.12</td>
</tr>
<tr>
<td>Depression (BDI)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline Score</td>
<td>1</td>
<td>2652.8</td>
<td>111.3**</td>
<td>.73</td>
</tr>
<tr>
<td>Condition</td>
<td>1</td>
<td>.38</td>
<td>.02</td>
<td>.00</td>
</tr>
<tr>
<td>Anxiety (BAI)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline Score</td>
<td>1</td>
<td>1806.2</td>
<td>99.3**</td>
<td>.70</td>
</tr>
<tr>
<td>Condition</td>
<td>1</td>
<td>6.4</td>
<td>.35</td>
<td>.00</td>
</tr>
<tr>
<td>Thought Control Q. (TCQ)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline Score</td>
<td>1</td>
<td>1369.9</td>
<td>25**</td>
<td>.37</td>
</tr>
<tr>
<td>Condition</td>
<td>1</td>
<td>1.9</td>
<td>.04</td>
<td>.00</td>
</tr>
<tr>
<td>Distress about Food and Body Image-Related Thoughts (PEWS)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline Score</td>
<td>1</td>
<td>399.5</td>
<td>16.1**</td>
<td>.26</td>
</tr>
<tr>
<td>Condition</td>
<td>1</td>
<td>313.3</td>
<td>12.6**</td>
<td>.22</td>
</tr>
</tbody>
</table>

When controlling for pre-test values, the ACT group as compared to the control group showed significantly greater reductions in disordered eating pathology at follow up ($F=13.7$ (1, 47), $p=.00$). Significant decreases in body shape anxiety, as measured by the Physical Appearance State Inventory (PASTAS) was also shown in the ACT group when compared to the control group over both weeks on average ($F=5.5$ (1, 41), $p=.02$). In addition, the ACT group showed a significantly greater reduction in both frequency of
eating and body image related thoughts on the two week average ($F=4.8 \ (1, \ 40), \ p=.03$),
as well as on distress related to these thoughts ($F=12.6 \ (1, \ 47), \ p=.00$). Analysis revealed
no significant differences between groups on measures of general anxiety and depression
or the Thought Control Questionnaire (TCQ). A comparative analysis was conducted
with ANCOVAs assessing differences between groups in the entire sample. There was no
difference in outcome for the entire sample versus the selected sample of participants
endorsing high concern. Analysis was also conducted at week one and week two
individually both with the full sample and with the high concern sample. The same
dependent variables showed significant changes between groups (PEWS; EAT-26;
PASTAS) at week one and at week two, as when weeks one and two were averaged.
There was not a significant difference between the scores of week one and week two in
either group, and in either sample. Therefore, averaging those two weeks allowed for
analysis of more participants, thereby increasing the power of the analysis in both the full
sample and the high concern sample.

Process Results

Table 7 shows means and standard deviations for the AAQ, AAQ-2 and AAQ-W
at pre-workshop and follow up evaluations. The mean and adjusted mean scores for the
change from pre-test to follow up, and Cohen’s d values are also shown in Table 7 on
page 54.
Table 7
Descriptive Statistics by Group for Process Measures (With Full Sample)

<table>
<thead>
<tr>
<th>Measure</th>
<th>Pre</th>
<th>Follow up</th>
<th>Change*</th>
<th>Adjusted Within Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>AAQ</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACT</td>
<td>68.2</td>
<td>10.8</td>
<td>74.1</td>
<td>7.1</td>
</tr>
<tr>
<td>Control</td>
<td>67.7</td>
<td>11.8</td>
<td>67.0</td>
<td>11.1</td>
</tr>
<tr>
<td>Between Groups d</td>
<td>.04</td>
<td></td>
<td>.76</td>
<td></td>
</tr>
<tr>
<td>AAQ-2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACT</td>
<td>45.5</td>
<td>12.2</td>
<td>50.3</td>
<td>8.3</td>
</tr>
<tr>
<td>Control</td>
<td>45.4</td>
<td>10.9</td>
<td>41.8</td>
<td>9.0</td>
</tr>
<tr>
<td>Between Groups d</td>
<td>.00</td>
<td></td>
<td>.98</td>
<td></td>
</tr>
<tr>
<td>AAQ-W</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACT</td>
<td>83.7</td>
<td>16.6</td>
<td>97.0</td>
<td>17.5</td>
</tr>
<tr>
<td>Control</td>
<td>84.2</td>
<td>21.8</td>
<td>85.0</td>
<td>20.9</td>
</tr>
<tr>
<td>Between Groups d</td>
<td>-.02</td>
<td></td>
<td>.62</td>
<td></td>
</tr>
</tbody>
</table>

*Change Column: negative number=a decrease in means/positive number=increase in means

Analysis of covariance, using baseline (pre-scores) as the covariate, the AAQ, 10 item AAQ and the AAQ-W were assessed for differences the change from baseline to follow up between groups in the high concern sample. Results revealed a significant increase in acceptance/willingness from baseline to follow up in the ACT group, as measured by the AAQ ($F=6.1$ (1, 41), $p=.01$). A significantly greater decrease in experiential avoidance, as evidenced by a decrease in AAQ-2 scores, was shown in the ACT group ($F=9.4$ (1, 32), $p=.01$). The ACT group also showed a significantly greater change in AAQ-W scores, assessing the degree of experiential avoidance of weight and eating related thoughts and feelings ($F=7.5$ (1, 29), $p=.01$). Results of ANCOVAs with these process measures are summarized in Table 8 on page 55.
Table 8
Between group ANCOVA results for changes in Process Measures (Pre to follow up) (with High Concern Sample)

<table>
<thead>
<tr>
<th>Measure</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>partial</th>
<th>η 2</th>
</tr>
</thead>
<tbody>
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<td>AAQ (16 item 2 factor)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Baseline Score</td>
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<td>1808.0</td>
<td>33.5***</td>
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<td>Condition</td>
<td>1</td>
<td>329.8</td>
<td>6.11**</td>
<td>.46</td>
<td></td>
</tr>
<tr>
<td>AAQ-2 (10 item)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline Score</td>
<td>1</td>
<td>27.4</td>
<td>.38</td>
<td>.01</td>
<td></td>
</tr>
<tr>
<td>Condition</td>
<td>1</td>
<td>623.6</td>
<td>8.8**</td>
<td>.27</td>
<td></td>
</tr>
<tr>
<td>AAQ-W</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline Score</td>
<td>1</td>
<td>1939</td>
<td>6.7**</td>
<td>.22</td>
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<tr>
<td>Condition</td>
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<td>288.8</td>
<td>7.5**</td>
<td>.20</td>
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</tr>
</tbody>
</table>

**p=.01 ***p<.001

Mediation Analyses
Meditational analysis with bootstrapping (Preacher & Hayes, 2004) was used for all analyses. This method allows for testing of an indirect effect of the proposed mediator on the dependent variable. In mediation testing, an assumption is made that there is an overall significant effect of X (in this case, treatment versus no treatment) on Y (the dependent variable). However, this does not necessarily need to occur in order for a mediator to have significant impact on the dependent variable. Preacher and Hayes (2004) propose that the Sobel method of significance testing for the indirect effect of the proposed mediator on the dependent variable is superior to the traditional Barron and Kenny model. In the Barron and Kenny (1986) method of mediation, a series of regression analyses are conducted to assess the relationship between the mediator and the dependent variable. Preacher and Hayes (2004) suggest two weaknesses to this approach related to the relationship between X and Y that cannot be accounted for by the mediator: (1) a type I error can be made (concluding a mediation is present when it is not) if only
very small changes are necessary to change the significance of the relationship between X and Y, and the addition of a mediator creates that change. (2) A type II error (concluding mediator is not present when it may be) when large changes are necessary to change the significance of the relationship between X and Y and the addition of a mediator does not create this. In addition, Preacher and Hayes (2004) suggest that testing for no difference between the total effect of X on Y and the direct effect of M (mediator) on Y is a more accurate test than performing a regression analysis (as in Barron and Kenny method) to assess the effect of X on Y through the mediator. This effect is often not equal to zero but to the difference between the total effect minus the direct effect.

Therefore, Preacher and Hayes (2004) recommend using the Sobel method of significance testing, and correcting for assumption of normal distribution by using a bootstrapping method of hypothesis testing. Preacher and Hayes (2004) provide an SPSS macro, which performs the Sobel test with bootstrapping. Bootstrapping, as defined by Preacher and Hayes (2004) is a method used to adjust for non-normal distribution and small sample size accomplished by taking a large portion of the sample, “sampling with replacement and computing the indirect effect” (p.722). In this way, a more accurate assessment of the indirect effect of the proposed mediator on the dependent variable can be tested without using a statistical model intended for large samples.

Meditational analyses were conducted to assess the AAQ, the AAQ-2 and the AAQ-W as mediators for change in the dependent variables. Mediation was conducted two ways which showed significant effect (1) with AAQ week 2 follow up data and change scores from baseline to follow up in the dependent variables; (2) with change scores between baseline to week 2 follow up for the AAQs and week two follow up
scores of the dependent variables. Also, Mediation analyses were conducted separately with the willingness and action factors of the AAQ and then with the combined subscales. Baseline to follow up scores for the AAQ and dependent measures were used for analyses. Mediation was not shown with the action factor of the measure, but was shown with the acceptance/willingness factor. Therefore, this factor likely accounted for the result of the measure showing mediation when the two subscales were combined and analyzed. Tables 9 and 10 present these results for Sobel mediation using the 16 item two factor AAQ, the AAQ-2 and the AAQ-W.

**Table 9**
Mediation Equation 1: M=AAQs  Follow up (Week 2)/ Y=Dependent Variables Follow up (Average) (High Concern Sample)

<table>
<thead>
<tr>
<th>Measure</th>
<th>Indirect Effect</th>
<th>Boot Strapping 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disordered Eating Pathology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EAT-26 AAQ-W</td>
<td>-4.4</td>
<td>2.3 -1.9 .05</td>
</tr>
<tr>
<td>Distress about food And Body Image-Related Thoughts (PEWS) AAQ-W</td>
<td>-2.3</td>
<td>1.4 -1.6 .08</td>
</tr>
<tr>
<td>Frequency of food And Body Image-Related Thoughts (PEWS) AAQ</td>
<td>-1.0</td>
<td>.05 -1.8 .06</td>
</tr>
<tr>
<td>Body Anxiety (PASTAS) AAQ-W</td>
<td>-3.9</td>
<td>2.1 -1.8 .07</td>
</tr>
<tr>
<td>Thought Control Questionnaire (TCQ) AAQ-2</td>
<td>-3.2</td>
<td>1.9 -1.6 .09</td>
</tr>
<tr>
<td>AAQ-W</td>
<td>-3.8</td>
<td>2.2 -1.7 .08</td>
</tr>
</tbody>
</table>
Mediation results with $p<.1$ are reported, showing trends toward statistical significance where $p$ is between .1 and .06. In assessing mediation from baseline to week two (the final follow-up assessment point), the AAQ was the strongest mediator when assessing values of week 2 dependent variables. The method of analyses where mediation was assessed only at follow up (weeks one and two averaged) using week two AAQ data showed mediation in the most dependent variables (including the TCQ and the PASTAS). Overall, the PEWS measure was the most frequent dependent variable showing significant effect with each AAQ measure as a mediator.

**Appetite Awareness Self-Monitoring**

Participants monitoring hunger and satiety, and binge and purge episodes during the first week (seven days) of the two week assessment period (i.e. following the initial/baseline appointment during the week prior to the first data collection appointment). Participants had three opportunities to rate hunger and satiety each day on a likert scale of 1-7 (1=very hungry, 4=neutral, 7=very full). An average hunger rating and satiety rating was computed for each day. Missing data for an entire day was accounted for by averaging the three days prior to it for hunger and satiety. Change
scores (i.e. satiety minus hunger ratings) were computed for each day. Hunger, satiety, and change scores were averaged across the entire week for each participant. Analysis of variance (ANOVAs) were conducted with hunger, satiety and change scores between groups. No significant differences were found between groups. There was substantial missing data in participants’ report of binge and purge episodes (i.e. only 4 participants filled in the blanks indicated to report binging and purging). Therefore, that data was not analyzed.

Discussion

Overall Goals

This study was a small randomized controlled trial to collect pilot data on the effectiveness of a brief ACT intervention targeting body dissatisfaction and disordered eating attitudes. Given that this is preliminary work using ACT in the area of disordered eating, the treatment group was compared to wait-list control to assess impact. Targets of intervention were (1) reduction of body image related distress (2) an increase in acceptance and willingness/decrease in experiential avoidance (3) reduction of extreme hunger and fullness ratings during self-monitoring of appetite and (4) reduction of binging and purging. From the initial proposal of the study in January, 2006 the research protocol was modified several times with regard to initial recruitment and sample characteristics. The initial plan for the study was to recruit college women who met sub-clinical criteria for either bulimia or binge eating disorder (based on frequency of binge eating and compensatory behaviors and body dissatisfaction).
The study also was initially to be conducted at two sites, the University of Nevada, Reno and the University of Colorado at Boulder. Because of recruitment problems that extended for well over six months at both study sites, the study was modified to accommodate a broader sampling of women; specifically, the study was eventually opened to any woman reporting high distress related to body image and was also opened to the Reno/Sparks community. Following Dr. Craighead’s leave from the University of Colorado, lack of an onsite study supervisor and recruitment problems stopped recruitment at that site. Over the next year, with study modifications, the proposed sample size was easily recruited from UNR and the Reno/Sparks community. Therefore, the research became a one-site versus two-site study.

Even though there were significant design modifications, the treatment protocol and study design (following recruitment) was maintained as proposed. All major goals of the research remained intact and were investigated with the exception of the capability to investigate the impact of ACT on binging and compensatory behaviors. Because the inclusion criteria were changed to include all women with high body dissatisfaction, not everyone in the study endorsed binge eating or a compensatory behavior. However, with AAT self-monitoring, data was collected on the frequency of those behaviors.

Discussion of Findings

Descriptive Statistics

The sample recruited was, on average, shown by the baseline measures to be overweight to obese (by BMI) with high levels of body image dissatisfaction and disordered eating attitudes. From that sample, a smaller sample was selected based on a high average (above 3 on a likert scale of 5) on two prescreen questions indicating
body image distress. Selecting this sub-sample allowed exclusion of thirteen individuals who endorsed moderate to low distress with regard to their body image.

Repeated measures were administered at one and two week intervals and at post-workshop across the sample. The two weeks were averaged, and change scores were computed for changes from baseline to the average of the two week measurement period. Changes from baseline to weeks one and two were computed separately. Both weeks were also averaged, and the change from baseline to that average score was also computed. Significant reductions in disordered eating pathology, body anxiety and distress about thoughts related to eating and weight were shown in the ACT group when compared to changes in the wait-list control group. There was no difference in the treatment outcome results between the entire sample and the high concern group on any of the dependent variables. This may have been due to the fact that a relatively small percentage of the entire sample did not meet the “high concern” criteria (i.e. only thirteen participants of seventy-three were eliminated due to low screening scores).

When compared to the control condition, the sample as a whole and the high concern sample showed a significant decrease in disordered eating attitudes, anxiety related to body image, distress related to body image and eating, and less experiential avoidance/greater levels of acceptance. These findings support our hypotheses that the ACT workshop would be effective compared to a wait-list control in reducing body image related distress and disordered eating attitudes. The subscale of the Preoccupation with Weight and Shape Questionnaire (PEWS) measuring frequency of thoughts related to eating and body image did not show a significant reduction between groups while distress related to the thoughts (the distress subscale of the PEWS) did show a significant
reduction in the ACT group. These results align with the ACT therapeutic approach to accept thoughts and feelings versus attempting to “get rid” of or change them. While changes in disordered eating related variables decreased, there was not a significantly different reduction in depression, general anxiety scores, Thought Control Questionnaire scores between groups. This may be in part because these measures captured traits versus states of mood. Because the measurements were taking at relatively short intervals (5-7 days apart) state-related changes in anxiety and mood (i.e. questions related to how participants were feeling in the moment) may have been more appropriate to assess.

Avoidance and Acceptance

Correlations were conducted with the AAQ, AAQ-2 and the AAQ-W and the standardized measures administered at baseline. Lower levels of acceptance/willingness and higher levels of experiential avoidance (as measured by the AAQ, AAQ-2 and AAQ-W) were related to higher levels of disordered eating pathology, depression, general anxiety and distress and frequency of thoughts about eating and body image. While we cannot infer causation, these results are consistent with the theory that disordered eating and associated features serve an experiential avoidant function. The AAQ-W correlated specifically with measures of eating disorder symptoms given that the content of the items is eating and weight-specific. Correlations with widely used eating disorder measures, such as the MAC and the EDI-2 provide support for use of the AAQ-W in assessing acceptance related specifically to eating and weight related issues. This provides new data on the AAQ-W, which is a relatively new measure (Lillis, 2006). That the AAQ-2 and the AAQ each correlated with some of the same and some different measures may indicate some relevant difference in items between measures. The AAQ
has six additional items, and these may account for the stronger relationships shown with subscales of the EDI-2 and other measures.

Mediation

The process variables evaluated in this study as mediators were acceptance (AAQ), willingness (AAQ-W), and experiential avoidance (AAQ-2). Three versions of the AAQ, each of which are designed to tap into the construct of experiential avoidance and acceptance, but in slightly different ways. The AAQ was designed with two subscales that have been assessed in non-clinical populations (Bond & Bunce, 2006). One subscale measures action (behaviorally) and the other measures acceptance/willingness. These were analyzed separately, and yielded results showing acceptance/willingness as a mediator while action did not mediate changes. The AAQ-W was administered as a specific, weight and eating related measure of avoidance/willingness. Analysis with these measures showed acceptance to be a mediator of reductions in distress related to thoughts about eating and body image, and reductions in experiential avoidance to also be a mediator for this variable. Acceptance (as measured by the AAQ) was shown as a mediator for reductions in disordered eating pathology (as measured by the EAT-26) at a level near statistical significance.

AAT Monitoring

Participants in both groups self-monitored for one week. The theory behind the monitoring was that, following the workshop (and having been introduced to mindful eating), participants would gain an increased awareness of eating in response to their internal physical experience of hunger and stopping in response to satiety. Eating in response to physiological cues versus eating in reaction to rules or external cues is likely
to be a more reliable method of calorie regulation. It is in opposition to dieting, which is usually derived from a set of rules which are not individualized. Appetite self-monitoring aligns well theoretically with ACT in that it uses experience to be one’s guide. The participants in the control group did not receive any intervention prior to self-monitoring. They were given instructions on the process, but no rationale used in the workshop. Interestingly, neither group showed any significant change over the week long period, and no significant changes were shown between groups. There were significant differences between groups on two days of the week with regard to hunger and/or satiety, but not both on any given day. Thus, it is likely that these were incidental differences since no pattern of change was observed. In addition, individuals had significant missing data in the monitoring packets. This was corrected by averaging their other days of hunger and satiety and using these scores in place of missing data. Only a few participants actually endorsed if they binged or used a compensatory behavior. Therefore, there was simply not enough data on those objective behaviors for reliable analysis.

What was shown was that monitoring effectively created no change in any dependent measures over the week-long period. There was some concern that self-monitoring would be reactive in the control group where no intervention was intended. Therefore, standardized measures were administered post workshop in the control group (following two weeks of data collection including monitoring). These post-scores were compared to the treatment group’s post workshop scores. There were no significant differences shown post-workshop between groups. All significant differences shown in the study between groups were evidenced during follow up (comparing treatment versus no treatment). Therefore, self-monitoring in the control group was not an apparent
confounding variable, nor was it instrumental in any change post-treatment. The adaptation of the monitoring from Craighead’s (2006) Appetite Awareness self-monitoring was substantial. Directions to stay in a certain range on the likert scale (so not to get “too hungry” or “too full”) were omitted. These were omitted so as to not create a rule-governed monitoring process. That would have likely functioned as a reactive process in the control group and also would have been theoretically conflicting with principles of behavioral flexibility and diffusion from rules. However, it may have been that there was not enough guidance or instruction on the function of the self-monitoring. Specifically, in the treatment group, it may have been more useful to teach the self-monitoring during the mindfulness module of the workshop. Attention to how increasing awareness of physical cues can guide eating and reduce rule-governed eating and experiential avoidance would be a more specified approach.

Theory and Application

In developing the treatment protocol used in the study, the goal was to create a brief intervention that would target a wide range of experiences and behaviors related to eating and body image that are distressing to many women. The current treatments available for disordered eating typically are designed for clinically severe eating disorders and are focused on change-oriented processes (such as symptom reduction). What the literature has shown is that a significant percentage of women struggle with high levels of distress related to body image issues throughout their lifetime. This often co-occurs with attempts to change the body by repeated dieting. As the abstinence violation model has shown, diets are the precursor to binging, restriction, and compensatory behaviors. This creates a struggle that becomes cyclical. The goal was to
offer a solution via this brief intervention; instead of providing additional control strategies of changing one’s thoughts, or trying new dieting strategies, this intervention created exposure to acceptance as an alternative.

In line with creating a protocol that was broadly applicable, our sample demographic ranged in age from 18 to 68 years. It was typical that participants in the same workshop represented three generations of women, with age spans of up to forty years. Clinically, this proved useful in highlighting the universality of suffering among women of all ages with regard to body dissatisfaction and eating struggles. It also allowed for sharing of experiences between the age groups, which participants often reported as being helpful. While many clinical trials utilize strict exclusion criteria, this study worked in a nearly opposite manner, inviting every interested female to participate. Self-selection without exclusion or pre-workshop interviews modeled an approach of acceptance for the participants. Many questioned if they were “allowed” to be in the study, asking if they would be excluded based on age, weight or having had prior treatment for an eating disorder. The ease with which each person was accepted into the study created an initial environment where obvious differences in age or weight of workshop participants were not barriers. In addition, by including women with a wide range of eating and body image related issues, the theory that the constellation of these symptoms serves a similar function was clinically observed. From a clinical application perspective, the utility of the activities were not subjectively lessened, and barriers did not appear to arise based on demographic or specific symptom struggle of the participant. It was clinically evident that struggling, fighting against, and attempts to control body discomfort were universal to participants. This struggle was the identified point of
clinical intervention in the workshop, so the content of the specific body image or eating struggle was less emphasized.

**Limitations**

One limitation to the study was sample size. The participants who were included in the high concern group cut the overall sample to 60; of those participants, some had missing data, and some did not complete the study. Therefore, analysis was conducted with just under fifty participants in the high concern sample. This problem was due to two factors: one is that the study required two weekly follow up visits instead of one post measure and one three month follow up time (as in a similar workshop study by Lillis, 2006). It may have proved more effective to schedule the participants to return once versus twice at short intervals. As well, the researcher’s limitations due to severe illness during the summer workshops interfered with several follow up appointments, resulting in a majority of the missing data. Appointments were rescheduled, but not well attended by participants once rescheduled. This problem was amended in the fall and spring (2007/2008) when the primary researcher was working consistently with three research assistants who helped in seeing participants for follow up visits.

Another limitation to the study was the lack of specificity with which the sample was selected and defined. While it was useful to the application of the protocol to open the study to a broad population of women, it would have created more specificity in the research to use a standardized pre-screen questionnaire. This was attempted for six months, in which over 200 students at UNR were screened. However, students scoring in the selection range on the screening measure did not elect to participate. The problems with finding college women interested in participating who struggle with disordered
eating was an unexpected problem. Research supports that a high percentage of college women struggle with disordered eating issues. Why this population is not treatment-seeking is an interesting research question in itself. It’s possible that because dissatisfaction with body image and chronic dieting is the statistical norm, a context of acceptance of the problem exists. The term “normative discontent” may fit quite well with the college female population, where disliking one’s body and making many attempts to change it are part of an accepted social process.

Given that there was not a prescreen to select women who struggled specifically with binging and purging (or other compensatory behaviors), the study did not measure objective behaviors. Because the self-monitoring was not well adhered to by participants, those who did endorse binging and purging were too small of a sample to evaluate.

Conclusions

This ACT workshop study was effective in meeting the treatment goals of reducing body image related distress and disordered eating attitudes. It provides a new and more effective alternative to the psychoeducation-based workshops which have not shown efficacy and have also shown iatrogenic effect. As well, the study adds to the current literature on acceptance-based interventions for eating disorders and related problems with new data on the AAQ-W as it relates to validated eating disorder measures. Body image and related eating concerns is a new area of application for Acceptance and Commitment Therapy; therefore, the study is helping to lay the groundwork for ACT applied to disordered eating populations. Change strategies have consistently not shown efficacy at long-term follow up, both in clinical and non-clinical
populations in eating disorders prevention and intervention. The present study provides a new approach to addressing body dissatisfaction and distress about eating and weight.

The attributes to this ACT intervention are that it is brief and may be generalized to women of a wide age range and with a broad constellation of symptoms. It is an intervention that could be easily applied to a wide variety of setting, from college campuses to work environments, health clubs and hospitals. Given that the literature on body dissatisfaction shows stability in this symptom across the lifespan, women who are fifty have likely had a twenty-five to thirty year struggle with feeling uncomfortable in their own skin. As a workshop activity, women were asked to raise their hands when asked if they had been struggling with attempts to change their body for 5 years, 10 years, 20 years, etc. The subjective length of time, on average, was over fifteen years. Therefore, it may be that as women age and their body becomes less representative of the Western representation of female beauty, distress may elevate related to the struggle with eating and body image. As well, the years of struggling may promote treatment seeking. Contrary to the college population, middle-aged to older women may have grown tired of a life-long struggle with disliking their body and searching for various ways to change it. The experience of various diets, pills, and other strategies not being workable long-term may be more apparent to older women. As well, the experience of moving further away from youth and associated physical features valued in society may cause increased distress.

However, the workshop was applicable and helpful to younger women as well. A few examples illustrate the range of issues presented across workshops: college women using purging and laxatives as dieting strategies because it is “normal” to do so; women
in their 30s experiencing self-imposed social limitations with judgments of self image; a mother in her 40s hiding her purging from her daughter who is recovering from bulimia; women in their 40s and 50s not physically close to their partner or husband because of body dissatisfaction; and a woman in her 60s isolating from any social contact out of shame related to body shape and size. These are all examples of women representing the sample in this study. With such a diverse sample experiencing the benefit of the workshop, generalization of the results is perhaps the most prominent strength of this study. Another prominent strength is the finding that acceptance is a mediator for change in disordered eating attitudes and distress related to body dissatisfaction. This provides strong support for further use of ACT as an intervention for individuals struggling with eating and body image related distress.

The workshop in this study provides a novel approach from traditional psycho-education groups and prevention programs which have historically shown poor outcome. Given that this study showed effectiveness in reducing targets of intervention, it would be worthwhile to replicate. Replicating the study by comparing it to a standard treatment or prevention workshop (such as a psycho-educational workshop) would be the next step in treatment development. Along with comparing it to Treatment As Usual (TAU), teaching the self-monitoring component with more specificity with a mindfulness-focus may improve outcome. Finally, including a longer follow up period (3-6 months) would be another useful step in treatment evaluation. This area of research warrants attention. The potential impact may provide acceptance as a solution to the stigma experienced in Western society by overweight individuals, and as means for ending the suffering evidenced across women of all shapes and sizes.
References


Hesse-Biber, S., Report on a panel longitudinal study of college women’s eating patterns and eating disorders. *Health Care for Women International, 13 (4).*


Appendixes

I. Recruitment Materials
II. Consent Forms and Demographics Questionnaire
Appendix I
Recruitment Materials
ACCEPTANCE WORKSHOP FOR WOMEN

~Are You Distressed About Your Weight or Body Image?
~Do You Overeat, Diet, or engage in Self-Induced Vomiting, Laxative Use or Other Methods to Control Your Weight?

The UNR Department of Psychology is offering ongoing workshops for a research study on body image and eating concerns.

Participants in will each earn $50.00 cash.
Interested?
Contact Adria Pearson, M.A.
pearson2@unr.nevada.edu
August, 2007

Dear Health Care Provider,

I am writing to inform you of a treatment opportunity for your female patients who struggle with body image concerns and/or disordered eating habits (i.e. excessive dieting, binging, purging or other methods of weight control).

The Department of Psychology at the University of Nevada, Reno is offering ongoing one-day workshops for women struggling with body image and eating concerns. The workshop is a research study under the direction of Dr. Victoria Follette, Professor and Chair of the Department of Psychology. All participants will earn $50.00 cash for participation.

The proposed project is to conduct one day workshop using Acceptance and Commitment Therapy (ACT) to target the reduction of disordered eating behaviors and body dissatisfaction in a sample of women and to compare this treatment to a wait-list control condition. Participants in both conditions will receive the workshop. The study’s primary aim is to encourage a healthy pattern of eating, and acceptance of one’s body shape and size, in the midst of societal pressures for women to achieve the “thin ideal”. Two doctoral candidates from the clinical psychology Ph.D. program are facilitating the workshops.

Participants may currently be in individual psychotherapy and may be taking psychotropic medications. However, participants must not be currently receiving individual psychotherapy with the primary treatment focus being an eating disorder. Individuals who have been hospitalized for any psychiatric reason (including an eating disorder) will be excluded from participation.

To refer patients to the study, please have them contact the co-investigator, Adria Pearson, M.A. at pearson2@unr.nevada.edu stating their interest and providing contact information. If you have any questions, please contact Ms. Pearson at the University of Nevada, Reno Counseling Services at 775-784-4648.

We have included a study flyer, which you may provide to your patients or post in your office setting if desired. We look forward to your referrals.

Thank you,

Adria Pearson, M.A.
Department of Psychology/296

Name of Institution Providing IRB Review (Institution A):
University of Nevada, Reno (UNR)
Federalwide Assurance (FWA) #: FWA00002306
IRB Registration #: IRB00000216

Name of Institution Relying on the Designated IRB (Institution B):
University of Colorado at Boulder (UCB)
FWA #: FWA00003492

The Officials signing below agree that the University of Colorado at Boulder may rely on the designated IRB for review and continuing oversight of its human subjects research described below:

( ) This agreement applies to all human subjects research covered by Institution B's FWA.

(XX) This agreement is limited to the following specific protocol(s):

Name of Research Project: A Group Intervention of Disordered Eating
UNR Protocol #SA05/06-094
Name of Principal Investigator: Victoria Follette, Ph.D.
Sponsor or Funding Agency: none        Award Number, if any: n/a

( ) Other
(describe):

The review performed by the designated IRB will meet the human subject protection requirements of Institution B's OHRP-approved FWA. The IRB at Institution A will follow written procedures for reporting its findings and actions to appropriate officials at Institution B. Relevant minutes of IRB meetings will be made available to Institution B upon request. Institution B remains responsible for ensuring compliance with the IRB's determinations and with the terms of its OHRP-approved FWA. This document must be kept on file by both parties and provided to OHRP upon request.

Signature of Signatory Official (Institution A):

[Signature]
Date: 8/4/06

Print Full Name: Mark L. Brenner, Ph.D.    Institutional Title: Vice President for Research

NOTE: The IRB of Institution A must be designated on the OHRP-approved FWA for Institution B.

Signature of Signatory Official (Institution B):

[Signature]
Date: 8/5/06

Print Full Name: Joseph G. Rosse, Ph.D.    Institutional Title: Director, Office of Research Integrity
Standard email sent to participants who expressed interest in the research study:

I'm happy to hear that you're interested in the study. The study is a one-day workshop that lasts for 8 hours, with a free lunch provided. In addition, you will be asked to attend three, 15 minute weekly appointments with the investigator either prior to or following the workshop. During these short appointments you will be asked to complete a questionnaire packet. All information pertaining to the study (i.e. questionnaires and information shared in the workshop) will remain confidential. You will be assigned an I.D. number which will be used with all study data, so that no study data will be connected to your name. The workshop promotes acceptance, healthy eating patterns and is for women who are distressed about their weight/body image and/or have disordered eating (i.e. excessive dieting, binge eating, purging, laxative abuse). It is not a weight loss program, but is definitely open to women who are unhappy with their current weight and shape. The workshop is facilitated by two doctoral level therapists. Each participant receives $50.00 or completing the study. If you're interested in participating, please let me know as soon as possible, and I will inform you of the date of the next workshop.

Please feel free to contact me via this email address or you may call me at 775-813-2904.

Sincerely,
Adria N. Pearson, M.A.
Clinical Psychology Doctoral Student
Below is an example of a standard email sent to participants randomized to the wait-list control condition. A similar standard email was also sent to participants in the treatment condition.

Hello,

Thank you for your continued interest in the study! To participate, you’ll need to choose a day and time for an initial appointment (lasting about 1 hour), and also choose days and times for two follow up appointments (lasting about 20 minutes each). Please review the options below, and let me know what would work best for you.

OPTION 1
1. Initial appointment on Saturday, Feb 9th, Sunday Feb, 10th or Monday, Feb 11th
2. Your second appointment one week later, either on 2/14, 2/15 or 2/17.
3. Your workshop would be on Saturday, Feb 23rd.

OPTION 2
1. Initial appointment on either 2/22, 2/23 or 2/25
2. Your second appointment one week later, either on 2/28, 2/29 or 3/3
3. Your workshop on March 8th

OPTION 3
1. Initial appointment: Please choose from 2/29, 3/1 or 3/3
2. Second appointment: Please choose from 3/7, 3/8 or 3/10
3. Workshop date: March 15th 8am-5pm.

Hopefully one of these alternatives will work for you. If you have any questions, please feel free to contact me via this email address or you may call me at 775-813-2904.

Sincerely,

Adria Pearson, M.A.

Doctoral Candidate, Clinical Psychology

University of Nevada, Reno
Appendix II
Consent Forms and Demographics Questionnaire
UNR Social Behavioral Institutional Review Board

VIDEOTAPE, PHOTOGRAPH CONSENT FORM

Title of Study: A Group Intervention For Disordered Eating
Protocol Number: SA05/06-094
Investigators: Victoria M. Follette, Ph.D., 775-784-6828, Adria N. Pearson, M.A. 775-784-4648, Linda Craighead, Ph.D. and Mandy Prina

1. PURPOSE

Videotapes will be used in this study to ensure that the intervention being provided is being done in a manner consistent with the protocol (research purposes) and in a manner that will be most beneficial to the participant (clinical supervision purposes).

2. PROCEDURES

The video will depict the therapist and the participants (clients) seated in chairs that are in a large group room, and the participants and therapist will be talking. The experimental room has two cameras, which show the entire therapy room. You may refuse to be videotaped at any time without penalty.

3. VIEWING

The only individuals who will have access to the videotapes will be the investigators and graduate research assistants in the clinical psychology program at UNR, and if necessary the University of Nevada, Reno Social Behavioral Institutional Review Board. It is necessary to have images so that the therapist can receive supervision on the manner in which the intervention is administered. Videotaping is also necessary to make sure that therapists delivering the treatment are adherent to the treatment manual. Videotaping therapy session is standard practice in most educational institutions where students are practicing therapy and in psychotherapy intervention studies.

4. CONFIDENTIALITY

All taped materials will be kept in a locked file cabinet in the investigators’ research office when not being utilized, and will be kept until the research utilizing this data is completed. The tapes will not be used for any other purpose without your written permission. When the current research is completed, the tapes will be erased or taped over. The tapes will be labeled with the participant numbers; no identifying information will be placed on the labels of the tapes. All coding information, data, and consent forms will be stored separately from each other in locked files cabinets in a locked office.

Participant’s Initials

(Ver: 4/04/96)
Page 1 of 2
5. CONSENT

I agree to allow my intervention sessions in the course of this study to be videotaped. I understand that the videotapes produced from these sessions will only be viewed by the investigators and doctoral students in clinical psychology for the purposes of monitoring the manner in which the intervention is delivered, for both clinical supervision and research purposes. These tapes will not be viewed by other individuals or used for any other purposes. After the tapes have been used in this investigation the tapes will be erased, this period of time will not be greater than ten years.

6. CLOSING STATEMENT

I have read the materials and agree to have my intervention sessions videotaped and viewed by the investigators. I have the right to waive consent at any time in this investigation and may withdraw my consent without penalty.

MY SIGNATURE BELOW INDICATES THAT I HAVE DECIDED TO VOLUNTEER TO BE VIDEOTAPED AND THAT I HAVE READ, I UNDERSTAND, AND I HAVE RECEIVED A COPY OF THIS CONSENT FORM.

DATE ___________ SIGNATURE OF PARTICIPANT

DATE ___________ SIGNATURE OF INVESTIGATOR

DATE ___________ SIGNATURE OF WITNESS

Participant’s Initials ___________ (Ver: 4/04/06)
TITLE OF STUDY: A Workshop Intervention for Problems in Eating
INVESTIGATOR(S): Victoria Follette, Ph.D. (775) 784-6828, Adria N. Pearson, M.A. (775) 784-4648, Linda Craighead, Ph.D. (404) 727-7558 and Mandy Prina (775) 682-8674

PROTOCOL #: SA05/06-094

PURPOSE
You are being asked to participate in a research study. The purpose of this study is to assess your behaviors and attitudes related to eating and weight concerns and the subsequent effect of a one day workshop with other college women addressing eating and weight concerns. Research has shown that a high percentage of college women experience some type of problems with eating. Thus, Symptoms such as body dissatisfaction, dieting and other behaviors such as bingeing and purging are becoming a statistically normative pattern among college women. This study’s primary aim is to encourage a healthy pattern of eating, and acceptance of one’s body shape and size, in the midst of societal pressures for women to achieve the “thin ideal”.

PARTICIPANTS
You are being asked to participate because you are a female, 18 years of age or over, who identified as being concerned about their body shape or size and expressed interest in participating.

PROCEDURES
If you consent to participate in this research study you will be participating in a one day workshop with 6-10 other women, which will address eating, weight and other related concerns using Acceptance and Commitment Therapy (ACT). The workshop will be eight hours in length. Participants will be given one hour for lunch, which will be provided by the study staff. Three hours in the morning and three hours in the afternoon will be used for the intervention. Thirty minutes at the beginning and end of the day will be devoted to completion of standardized questionnaires which will ask questions about eating, weight, body image and thoughts and feelings you may or may not experience.

You will be also asked to attend three short (15 minute) weekly appointments with the investigator where you will be asked to complete some self-report questionnaires related to eating, weight and other thoughts and feelings you may or may not experience.

All of these experimental procedures will take place in the Mack Social Sciences building at the University of Nevada, Reno at the University of Nevada, Reno campus and in the Muenzinger Psychology building on the CU, Boulder Campus.

ALTERNATIVES
You will be provided with a treatment referral and contact information for no-cost individual and group psychotherapy provided by UNR Counseling Services. A comprehensive list of community counseling and psychotherapy referrals will also be provided to you. Additionally, if you are in need of a medical referral for eating related issues, we will provide you with a UNR Student Health medical referral to Dr. Cheryl Hug-English.
DISCOMFORTS, INCONVENIENCES, AND/OR RISKS
As part of the initial questionnaires it is possible that you may experience some discomfort answering questions of a sensitive nature. These include questions regarding weight, eating behaviors, compensatory behaviors, and thoughts and feelings about weight and shape. You may skip questions on questionnaires that you do not wish to answer and may withdraw from the study at any time.

Should you decide to participate in the workshop, it is possible that you may experience some discomfort with the personal nature of the questions involved in workshop activities and interactions. Again, the content of these questions will involve eating behaviors, and thoughts and feelings about weight, shape and eating. Again, you may choose to not answer questions and may choose to not participate in workshop activities, and also may withdraw from the study at any time.

In addition to the option of not answering questions and/or withdrawing from the study, confidentiality with regard to all study data (i.e. questionnaires and tapes of the workshop) is ensured. You will be assigned an I.D. number that will be used in place of personal identifying information on all study data. All study data and contact information sheets will be stored in separate locked file cabinets in Dr. Follette’s and Dr. Craighead’s psychology research laboratories on the UNR and CU, Boulder campuses, which only research staff will have access to. Once you are enrolled in the study, you will be assigned an I.D. number which will be used to label all study data (questionnaires and self-monitoring forms).

Ms. Pearson and another doctoral student in clinical psychology will be the primary workshop facilitators. The co-facilitators, workshop members and the supervising clinical psychologists (Dr. Victoria Follette and Dr. Steven Hayes) will be the only individual who will have access to information pertaining to the workshop. The group members will be instructed to maintain confidentiality of other group members at the outset of the workshop. The co-facilitators have been trained on confidentiality as part of the clinical training in the doctoral program. Each workshop will be videotaped for training purposes and for assurance of quality of care and adherence to the workshop protocol. These tapes will only be viewed by the co-facilitators and by Dr. Follette and Dr. Hayes for supervision purposes to assure quality of care and adherence to the workshop protocol. The video tapes are stored in locked file cabinets in locked rooms, which are located in locked offices in the Psychological Services Center (PSC) on the UNR campus, and (for all data at the CU, Boulder site) in the Rainy Psychology Clinic in the Muenzinger Psychology Building on the CU, Boulder campus.

BENEFITS
There will be no direct benefit to attending the three 15 minute post assessment minute meetings with the investigator to complete standardized questionnaires. If you decide to participate in the workshop, you may gain benefits from the intervention provided in the workshop.

The potential benefits of this study to research participants are to restore more normative eating patterns and reduce eating and weight related concerns. In addition, the study may provide preliminary evidence of Acceptance and Commitment Therapy (ACT) as an effective intervention.
for eating related problems among college women. Given that problem eating behaviors are prevalent among college women, and prevention programs for eating disorders and current treatments show minimal effectiveness follow-up, this study aims to preliminarily investigate ACT as an intervention to more effectively address this problem. In addition, results of this study may be helpful to other college women struggling with eating and weight concerns.

CONFIDENTIALITY
Your identity will be protected to the extent allowed by law. You will not be personally identified in any reports or publications that may result from this study. Only the UNR Social Behavioral Institutional Review Board, the investigators (Dr. Victoria Follette, Adria Pearson, M.A., Linda Craighed, Ph.D. and Mandy Prina) and the research assistants directly involved in data collection procedures will have access to the data. All data will be stored securely in locked file cabinets that are kept in the Principal Investigator’s locked laboratory rooms in Mack Social Science Building at UNR. This information will be stored for ten years. At the end of that time, all paper materials will be shredded and all video taped data will be erased. Any further use of the video tapes will not occur after completion of the study unless written permission is obtained.

The Department of Health and Human Service (HHS), other federal agencies as necessary, and the University of Nevada, Reno Social Behavioral Institutional Review Board may inspect your study records.

COSTS/COMPENSATION
Participants will be compensated with $25.00 cash for completing the workshop portion of the study and $25.00 cash at the conclusion of the third meeting with the researcher.

RIGHT TO REFUSE OR WITHDRAW
You may refuse to participate or withdraw from the study at any time. You may choose to withdraw from the study at any time without being obligated to complete the workshop itself or meet with the investigator. However, as noted above, the amount of compensation depends on whether participants complete the workshop and/or the three appointments with the researcher.

If the study design or use of the data is to be changed, you will be so informed and your consent re-obtained. You will be told of any significant new findings developed during the course of this study, which may relate to your willingness to continue participation.

QUESTIONS
If you have questions about this study or wish to report a research-related injury, please contact the Principal Investigator, Dr. Victoria Follette at (775) 784-6828, Adria Pearson, M.A. at (775) 784-4648, Dr. Linda Craighed at (404) 727-7558 or Mandy Prina at (775) 682-8674 at any time.

You may ask about your rights as a research subject or you may report (anonymously if you so choose) any comments, concerns, or complaints to the University of Nevada, Reno Social Behavioral Institutional Review Board, telephone number (775) 327-2368, or by addressing a letter to the chair of the Board, c/o UNR Office of Human Research Protection, 205 Ross Hall / 331, University of Nevada, Reno, Reno, Nevada, 89557.
CLOSING STATEMENT

I have read ( ) this consent form or have had it read to me ( ). [Check one.]

 has explained the study to me and all of my questions have been answered. I have been told of the risks or discomforts and possible benefits of the study.

If I do not take part in this study, my refusal to participate will involve no penalty or loss of rights to which I am entitled. I may withdraw from this study at any time without penalty.

I have been told my rights as a research subject, and I voluntarily consent to participate in this study. I have been told what the study is about and how and why it is being done. All my questions have been answered.

I will receive a signed and dated copy of this consent form.

Signature of Participant ___________________________ Date

Signature of Person Obtaining Consent ___________________________ Date

Signature of Investigator ___________________________ Date

Participant’s Initials ___________________________ (07/16/2007 ver.)
A Workshop Intervention for Problems in Eating
Participant Demographics

1. Today’s Date: __________

2. Your Name: ________________________

3. The best phone number to reach you: ________________________

4. Your email address: ________________________

5. How would you prefer that we contact you, by phone or by email? __________

4. Your current mailing address:

____________________________________
____________________________________
City: ___________________________ Zip Code: __________
State: ___________________________

5. What is your age? __________ years.

6. What is your ethnicity? __________.