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MANIPULATION OF THINNESS AND RESTRICTING EXPECTANCIES: FURTHER EVIDENCE FOR A CAUSAL ROLE OF THINNESS AND RESTRICTING EXPECTANCIES IN THE ETIOLOGY OF EATING DISORDERS

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ABSTRACT OF THESIS

Agnes M. Annus

The Graduate School
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EVIDENCE FOR A CAUSAL ROLE OF THINNESS AND RESTRICTING EXPECTANCIES
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ABSTRACT OF THESIS

A thesis submitted in partial fulfillment of the requirements for the degree of Master of Science
in the College of Arts and Sciences at the University of Kentucky

By
Agnes M. Annus

Lexington, Kentucky

Director: Gregory T. Smith, Ph. D., Professor of Clinical Psychology

Lexington, Kentucky

2006

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MANIPULATION OF THINNESS AND RESTRICTING EXPECTANCIES: FURTHER EVIDENCE FOR A CAUSAL ROLE OF THINNESS AND RESTRICTING EXPECTANCIES IN THE ETIOLOGY OF EATING DISORDERS

Eating disorder expectancy theory proposes a causal role for expectancies for reinforcement from thinness. The authors conducted an experimental test of that hypothesis. Undergraduate college women (N = 154) were randomized to either a psychoeducational control of proven effectiveness or an experimental manipulation of thinness and restricting expectancies. Participants in each condition attended three experimental sessions and one, follow-up session, each one week apart. For both groups, body dissatisfaction, disordered eating, purging frequency, and binge eating frequency declined over the course of the study. In addition, the thinness expectancy manipulation produced greater declines in thinness expectancies, body dissatisfaction, and purging behavior than the psychoeducational manipulation. These results provide further support for the role of expectancies in the etiology of eating disordered behaviors.

KEYWORDS: Eating Disorders, Restricting, Thinness, Expectancies, Etiology

Agnes M. Annus

August 27, 2006

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ACKNOWLEDGEMENTS

I would like to thank the many people who contributed to this scientific work. First, I would like to thank the chair for this thesis project, Dr. Gregory T. Smith, for his instruction and enthusiasm at all stages of this process. In addition, I wish to thank Dr. Richard Milich and Dr. Ruth Baer for serving on my thesis committee and for their insights that helped to improve this study. I would also like to thank the many individuals who helped with the conceptualization of the project, making the tapes, and data collection.

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Chapter One

Introduction

Recently, research on eating disorder etiology has begun to focus on the role of expectancies for thinness and eating (Hohlstein, Smith, & Atlas, 1998). Expectancies are thought to represent summaries of one's learning history, such that identified risk factors including perceived pressure to be thin (Stice, 2002), weight-related teasing (Stice & Shaw, 2002), and negative maternal modeling (Annus, Smith, Fischer, Hendricks, & Williams, in press; MacBrayer, Smith, McCarthy, Demos, & Simmons, 2001) are all thought to contribute to expectancy formation. Thus, eating disorder expectancy theory may be able to integrate findings about these various risk factors (Smith, Cyders, Fischer, & Simmons, 2004; Smith, Simmons, Flory, Annus, & Hill, in press).

Expectancy theory, first articulated by Tolman (1932), posits that social learning experiences lead to the formation of expectancies for the consequences of behavior, which affect the future likelihood of that behavior. Thus, just as expectancies appear to play a causal role in relation to other behaviors such as mood, pain, fear, substance abuse (Kirsch, 1999), smoking (Brandon, Wetter, & Baker, 1996), and alcohol consumption (Goldman & Darkes, 1993; Smith & Goldman, 1994), expectancies may play a causal role in the etiology of eating disordered behavior. This report describes experimental evidence for the causal role of expectancies in disordered eating behaviors.

Thus far, a number of studies have been conducted in order to validate eating disorder expectancy theory. Reliable measures with clear factor structures have been developed to measure expectancies for the consequences of thinness and restricting food intake (Thinness and Restricting Expectancy Inventory; TREI; Hohlstein et al., 1998), as well as for eating (Eating Expectancy Inventory; EEI; Hohlstein et al., 1998). The TREI appears to have one, general factor, while the EEI can be split into five factors: eating helps manage negative affect, eating helps alleviate boredom, eating leads to feeling out of control, eating enhances cognitive competence, and eating is pleasurable and is useful as a reward. These measures of thinness and eating expectancies are able to differentiate eating disordered from non-eating disordered individuals with 94% accuracy (Hohlstein et al., 1998), and their factor structure has been

replicated in early and late adolescents (MacBrayer et al., 2001; Simmons, Smith, & Hill, 2002), across race (Atlas, Smith, Hohlstein, McCarthy, & Kroll, 2002), and across gender (Boerner, Spillane, Anderson, & Smith, 2004). For each demographic group, scores on the TREI and EEI factors correlate with eating disorder criterion variables such as bulimic symptom endorsement and dieting (Simmons et al., 2002).

In addition, expectancies are related to the kinds of experiences that adolescents have had with thinness and eating (MacBrayer et al., 2001), supporting their operationalization as a summary of one's learning history. They appear to mediate the influence of negative maternal modeling and being teased about one's weight on endorsement of eating disordered behaviors in both adolescents (MacBrayer et al., 2001) and adults (Annus et al., in press). They also appear to mediate the influence of sociocultural pressure to be thin on bulimic symptoms (Stice, Nemeroff, & Shaw, 1996). In fact, when measured at the start of middle school, expectancies predict the subsequent onset of binge eating and purging and they differentiate among girls whose symptoms are developing along different trajectories (Smith et al., in press).

In order to further establish the causal role of expectancies in eating disorders, research needs to show that the experimental manipulation of expectancies can lead to changes in other risk factors for eating disorders and to changes in disordered eating behaviors. A preliminary experimental study (Fister & Smith, 2004) showed that a brief manipulation of thinness expectancies disrupted their apparent role in the risk process by reducing their relations to other risk factors. To further validate eating disorder expectancy theory, one must test whether experimental manipulation of expectancies can produce changes in endorsement of eating disordered behaviors and attitudes. This is the aim of the current study. In this first expectancy manipulation intervention, we focused on expectancies for reinforcement from thinness and dieting.

Several factors were considered in the development of our expectancy manipulation. Thinness expectancies, as summaries of individuals' learning histories, include expected reinforcement in a wide range of settings, including being more attractive to members of the opposite sex, feeling better, more confident, more capable, and being more respected by others. Thus, we felt we needed a multi-session intervention addressing each aspect of the thinness expectancy content domain. Because sources of expectancy learning likely include other women, men, and celebrities, we also felt our intervention should include information from each of these

sources. In addition, one's learning history regarding the benefits of thinness has likely included both directly communicated, didactic knowledge processed systematically, as well information processed on a more heuristic, or emotional, level. Thus, we relied on the elaboration likelihood model of persuasion (Petty & Caccioppo, 1986) and included both types of information in our experimental manipulation.

Since women's lifetime of eating and dieting-related learning experiences is much greater than the new learning participants were exposed to in this study, and since women are likely to be exposed to expectancy-supporting learning experiences following completion of the study, we did not anticipate that this initial intervention would have a long-lasting effect. Our intention was not to test a treatment for eating disorder, but rather to show that a manipulation of expectancies can produce reductions in reports of eating disordered behaviors, thereby providing further support for eating disorder expectancy theory. We therefore conducted a three-week intervention and included a follow-up evaluation one week following the final intervention.

In order to provide a rigorous test for expectancy theory, a control manipulation of proven effectiveness, psychoeducation, was chosen. Most current treatments for eating disorders use some psychoeducation (Wilson & Fairburn, 1993), and there is evidence that brief psychoeducational treatments can lead to significant improvements in patients with eating disorders (Laessle, 1991; Olmsted, 1991; Ordman & Kirschenbaum, 1986). By comparing our expectancy manipulation to psychoeducation, we were able to control for demand characteristics as well as to test whether targeting expectancies can produce a greater effect than a standard intervention.

Our hypotheses were: (1) both the psychoeducational control and the experimental expectancy modification condition, each lasting three sessions, would lead to linear decreases in eating disordered behaviors across the three sessions and the fourth, one-week follow-up session; (2) the experimental, thinness expectancy modification condition would produce a significantly steeper decrease in both expectancy and disordered eating behavior endorsement than would the control condition; and (3) women whose expectancies dropped the most would show the steepest decline in symptom endorsement.

Chapter Two

Method

Pilot Study

We first conducted a pilot study designed to provide evidence that real men and real women held views that undermine the validity of endorsing extreme thinness expectancies; that evidence could then form the basis of the experimental condition. We therefore recruited groups of undergraduate men and women who were taking Psychology 100 at the time. We recruited 23 males, who participated in 6 pilot groups, and 25 females, who participated in 7 pilot groups. In gender homogeneous groups, we asked the participants to discuss pictures of female models of different sizes along with experiences they themselves have had with dieting and weight concerns. We also asked them to discuss their experiences and opinions regarding women being confident with their weight, women being concerned with their weight, and women being popular without being very skinny. We videotaped these discussions in order to be able to extract statements and language that would be accurate, real, and credible for the experimental tapes. We found that both the male and female groups provided a wealth of information that undermined the endorsement of extreme expectancies. For example, the majority of men indicated that they would prefer to date a curvy as opposed to a skinny woman.

Main Study: Participants

Participants were undergraduate, Caucasian women. From a screening pool of 2,400 individuals, we recruited women with the highest scores on a short form version of the TREI (Hohlstein et al., 19998). We chose Caucasian women because there is evidence that thinness may be a less central concern for women of other ethnicities (Barkley & Smith, in press), so manipulation of thinness expectancies may be less relevant for them. One hundred and sixty-four subjects were recruited. Of these, 160 subjects agreed to participate and 154 completed all four study sessions (Control group N=77; Experimental group N=77). Participants had a mean age of 19.08 years and had completed an average of 0.51 years of college (66.2% of participants had

completed less than 1 year of college). The majority of participants reported that their mother was a professional (39.0%), followed by secretary (15.6%), homemaker (14.3%), other (11%), manager (10.4%), farm owner (3.2%), retired/disabled/unemployed (3.2%), laborer (1.9%), and service worker or student (0.6% each). The majority of participants reported that their father was a manager (25.3%), followed by professional (24.7%), other (13.0%), farm owner (9.7%), retired/disabled/unemployed (7.8%), secretary (4.5%), laborer (3.9%), craftsman (2.6%), and homemaker (0.6%). Although we selected women with high levels of thinness expectancy risk, these women do not constitute an identified, clinical sample.

Study Design

Study design was a 2 by 4 repeated measures double-blind design. Subjects were randomized to either the control or experimental condition post-recruitment and attended four study sessions, each one week apart. During the first three sessions, subjects first filled out questionnaires and then watched a short manipulation video. After each manipulation session, subjects were given short homework assignments to complete before they returned for the next manipulation session. The order of the manipulation tapes was counterbalanced and both participants and experimenters were blind to the participants' conditions. The fourth session was a follow up session one week after the third manipulation session. At this session, participants completed questionnaires and a manipulation check. Participants were also debriefed and given referral information. Participants completed all outcome measures at each session.

In accordance with the elaboration likelihood model (Petty & Cacioppo, 1986), we attempted to include in each videotape both information aimed to be processed systematically and information aimed to be processed heuristically. Examples of information aimed to be processed systematically are data regarding picture ratings (in the experimental manipulation videotapes) and data regarding the prevalence of eating disorders (in the control manipulation videotapes). Examples of information aimed to be processed heuristically are quotes from pilot study participants, scripted group discussions (in the experimental manipulation videotapes), and street interviews (in both the experimental and control videotapes).

Manipulation of the Experimental Group

The expectancy manipulation tapes were scripted to specifically counter all the expectancies contained within the TREI by providing data and experiences that were contrary to their held expectancies. In each of the tapes, we presented quotes and group discussions taken from the pilot study as well as other evidence (such as picture ratings), presented by a narrator, undermining the validity of holding extreme thinness expectancies. We recognized that the tapes provide evidence contrary to many women's views and tried to address that by also presenting several interviews on the street in each videotape. Thus, each videotape contains several brief street interviews regarding the specific topic being discussed in the tape. These interviews also communicate information regarding individuals' experiences or opinions which undermine the validity of holding extreme thinness expectancies. These street interviews were meant to increase the generalizability of the information presented in the videotapes.

One tape addressed the thinness and restricting expectancies associated with feeling better, stronger, and more energetic when restricting food intake or being thinner (e.g. "I feel great when I limit the amount I eat"). The content of these videotapes included information about the effects of restricting eating, such as evidence for decreased strength, decreased energy, and increased irritability, when one does not consume an adequate amount of calories. This tape also included quotes from pilot study participants about negative experiences that had when they lost a lot of weight (such as "I always felt drained and had headaches," "I felt really nasty," and "I felt sickly and gross.")

Another experimental tape addressed expectancies regarding being more attractive if one were thin (e.g. "I would be more attractive to the opposite sex if I were thin"). This tape included a short taped conversation of a group of males, as well as two short interviews with males, discussing the female body and their experiences and preferences. Examples of male quotes are: "A curvy body and a little thickness are preferred by myself and a lot of guys I know", "I think a lot of guys, including myself, would rather be with a girl who wasn't obsessed with her body, even if she was a bit thick in places", and "Give me something to grab onto. I think it's funny that women are so concerned with weight. You don't have to be perfect. You can eat more than celery and lettuce. Some girls think they're fat when they look like one of those pictures: it's ridiculous". This tape also included male ratings of celebrities and pictures of women of

different sizes. For the most part, these ratings showed that men do not find larger women unattractive, but that they do find very skinny women unattractive.

The third experimental tape countered expectancies about being successful, popular, and having more friends if one were thin (e.g. “When I limit what I eat, I feel more capable and competent,” and “Others would think more highly of me if I were thin.”) The tape included a scripted discussion of a small group of women as well as two interviews with women discussing the attractiveness of different sized women, discussing their own experiences with being thin, and discussing experiences they had with larger friends who were very popular. Examples of female quotes are: “If I look at someone that’s skinny, I think ‘she has no muscle’, not that ‘she’s so skinny, she looks good’” and “If you’re confident and friendly, people will like you. I don’t care if you’ve got the perfect body, if you’re not nice or you don’t have a good personality, you’re not going to have many friends”. The tape also included some information about celebrities who do not feel that one needs to be very skinny to be successful, as well as celebrities who may be larger but are successful nevertheless. It is important to note that some expectancies (such as, “If I were thin, I’d do better in school or at my job”) were addressed in more than one video.

Manipulation of the Control Group

The control group watched the same number and length of tapes as the experimental group, but these tapes contained information of a psychoeducational nature. The first tape contained information about healthy weight and healthy eating. This tape included a discussion of the new food pyramid such as the food groups and its dietary recommendations. It was communicated that the food pyramid recommends eating all different types of food and eating a variety of foods.

The second tape included information about physical exercise, such as definitions of moderate and vigorous physical exercise, why physical activity is important, and different types of physical activity. It was also communicated that one should watch for injuries when exercising. Lastly, simple strengthening exercises were demonstrated for each of the muscle groups (such as lunges).

The third tape contained information about eating disorders, primarily discussing the diagnostic criteria for anorexia nervosa and bulimia nervosa. It also discussed: the factors that control eating, evidence that some celebrities may suffer from eating disorders, and negative experiences that individuals with anorexia nervosa and bulimia nervosa have had. Lastly, a list of questions (such as “are you constantly thinking about your weight and shape?”) were given that participants could ask themselves to see if they might have a problem with eating.

Measures

Thinness and Restricting Expectancy Inventory (TREI; Hohlstein et al., 1998). The TREI is a single scale measure that measures overgeneralized expectancies for life improvement from thinness, as described in the introduction. Hohlstein et al. (1998) showed that it was internally consistent and predictive of eating disorder symptomatology. Participants rated their endorsement of specific expectancies on a scale of 1 to 7, with 1 being “strongly disagree” and 7 being “strongly agree”. The means presented in the results section are average item scores. Cronbach’s alpha at each time point was, respectively, .97, .97, .95, and .98.

Eating Disorder Examination-Questionnaire (EDE-Q; Fairburn & Beglin, 1994): The EDE-Q is a self-report version of a semi-structured interview (EDE; Fairburn & Wilson, 1993) which assesses eating disorder symptoms. Overall scale scores, subscales scores, and ratings of binge eating and purging frequency from the EDE and EDE-Q have been found to be correlated (Fairburn & Beglin, 1994; Grilo, Masheb, & Wilson, 2001). There is considerable evidence for the validity of the EDE-Q, including evidence for convergent validity, superior ability to differentiate recurrent from infrequent bingers, and the ability to validly identify weight and shape concerns (Elder, Grilo, Masheb, et al., 2006).

The questions on the EDE-Q were modified to reflect the past 7 days (from the past 28 days) in order to reflect accurately the time between assessments in the study. In order to make our results presentation simple and concise, in the current study we present only to the overall EDE-Q score. Cronbach’s alpha for the modified overall EDE-Q scale at each time point was, respectively, .93, .94, .94, and .90.

Body Dissatisfaction subscale of the Eating Disorder Inventory-2: (EDI-BD; Garner, Olmsted, & Polivy, 1983). The EDI-2 is a self-report measure consisting of 8 scales measuring

different aspects of eating disorder symptoms and eating disorder risk factors. It has been shown to have good internal consistency and good convergent and discriminant validity (Garner et al., 1983), and it is frequently used by clinicians for the assessment of eating disorder symptoms and the evaluation of treatment effectiveness (Brookings, 1994).

The EDI-BD subscale uses 9 items to measure how often subjects experience satisfaction or dissatisfaction with certain body parts. Scores on this subscale have been shown to be highly correlated with other measures of body dissatisfaction as well as the clinical judgments of experienced clinicians (Garner et al., 1983). In order to increase the sensitivity of this measure, subjects were asked to rate on how many days in the past 7 they have experienced satisfaction or dissatisfaction with each body part. Thus, subjects' ratings ranged from 0 to 7 on each item, and the scale means presented in the results section reflect average item scores. Cronbach's alpha for the modified scale at each time point was, respectively, .87, .88, .89, and .90.

Manipulation Check: During the fourth session, participants also completed a manipulation check in which they rated, on a scale of 1 to 10, the believability of, and their interest in, the videotapes.

Homework: After watching each manipulation tape, subjects were given short homework assignments to complete and return when they came back for their next manipulation session. These assignments were concerned with applying the material in the tape to the participants' actual lives. For example, after the tape in which men talked about women's bodies, subjects were asked observe couples on campus and record the size of the women that they saw with boyfriends.

Statistical Analyses

The study design produced scores on a set of dependent variables at four different times for the control and experimental group. Because the very small amount of missing data appeared to be missing at random, we imputed missing values using the expectation-maximization (EM) procedure (Enders, 2006). Because each tape was developed to either impart a different set of information (for the control group) or address a different set of expectancies (for the experimental group), a decreasing linear trend on outcome variables was hypothesized. Thus, repeated measures ANOVAs were run and linear trends were examined. Then, the linear trend

group by time interactions were examined to address the hypothesis that the experimental group would produce a larger decrease at each study session than the control group. Lastly, because expectancy theory predicts that expectancy change produces a change in behavior, ANOVAS were run to examine whether participants with a significant decrease in their TREI scores had larger decreases on the EDE, EDI, purging frequency, and binge eating frequency.

Chapter Three

Results

Sample Characteristics

At time 2, 98.1% of subjects returned their homework from time 1. At time 3 and 4, respectively, 97.4% and 93.5% of subjects returned their homework. The mean believability rating of the videos was 7.23 ($SD = 2.36$) out of 10. The ratings of believability were significantly different for the control and experimental groups (8.38 for the control group and 6.08 for the experimental group; $F_{(1, 153)} = 48.52, p < .001$). The mean rating of how interesting the videos were was 6.23 ($SD = 2.05$), and the differences in ratings between the control and experimental groups were statistically significant (5.87 for the control group and 6.58 for the experimental group; $F_{(1, 153)} = 4.76, p < .05$).

At baseline, participants had a mean TREI score of 4.43 ($SD = .97$). This reflects an average response between ‘neither agree nor disagree’ and ‘slightly agree’ to the items on the TREI and thus suggests that, on average, participants did hold overgeneralized expectancies for the benefits of thinness and restricting food intake. Participants had a mean baseline EDE-Q score of 68.77 ($SD = 32.08$), suggesting that participants endorsed engaging in disordered eating behaviors or attitudes an average of 1.3 days out of the past 7. Participants had a mean baseline EDI-BD score of 4.68 ($SD = 1.73$). This mean EDI-BD score reflects that participants felt dissatisfaction with their body, or thought certain body parts were too large between 1 and 2 days in the past 7.

At baseline, participants reported an average of .10 episodes of self induced vomiting over the past week, .10 episodes of laxative misuse over the past week, and .23 episodes of diuretic misuse over the past week. Overall, 13% of subjects reported at least one episode of purging over the past week (average of .44 episodes over the past week) and 26% of subjects reported at least one objective binge episode over the past week (average of .59 episodes over the past week). Thus, a significant percentage of the participants reported disordered eating attitudes and behavior.

Overall Linear Trends

Means for both the experimental and control groups for each variable at each time point are presented in table 1. Examination of the overall linear trends for each variable supported the hypothesis that both study conditions would produce improvements in disordered eating behavior and attitudes. The repeated measures ANOVA for the overall linear trend was significant for the TREI ($F_{(1, 152)} = 13.80, p < .001$), EDE-Q ($F_{(1,152)} = 13.36, p < .001$), EDI-BD ($F_{(1, 152)} = 4.57, p < .05$), frequency of purging ($F_{(1, 152)} = 2.80, p < .05$), and frequency of objective binge episodes ($F_{(1,152)} = 14.92, p < .001$). See figure 1 for a graphical representation of these linear trends.

Linear Trend Interactions

Examination of group by time interactions revealed a significant linear trend interaction for the TREI ($F_{(1, 152)} = 1.92, p < .05$) and the EDI-BD ($F_{(1, 152)} = 2.56, p < .05$). The linear trend interactions for the EDE-Q, purge frequency, and binge frequency were not significant. Thus, the results for the TREI and EDI-BD suggest that scores for the experimental group decreased more than for the control group, even though scores in both groups decreased significantly overall. Figure 2 presents the linear trends broken down by group for the TREI, EDE-Q, EDI-BD, purging frequency, and binge eating frequency, respectively.

Change on TREI

After close examination of frequency distributions of change on TREI, participants whose TREI score decreased .5 or more points from time 1 to time 4 were grouped as participants with a significant change on their TREI. Participants whose score decreased less than .5 points from time 1 to time 4 were grouped as participants without a significant change on their TREI. According to this grouping, 26% of control group participants and 48.1% of experimental group participants had a significant decrease in their TREI score. A one-way ANOVA revealed that significantly more individuals in the experimental group had a significant decrease on their TREI

than those in the control group ($F_{(1, 152)} = 8.38, p < .001$). This result provides support for the experimental manipulation.

Furthermore, participants whose TREI decreased significantly had significantly larger decreases on the EDE-Q ($F_{(1, 153)} = 4.93, p < .05$) and marginally significantly larger decreases on purging frequency ($F_{(1, 153)} = 2.44, p = .06$). This result provides further support for the hypothesis that expectancy change produces change in behavior.

Table 3.1

Variable Means and Standard Deviations at Each Time Point Over the Combined Sample and by Experimental Condition

	Time 1	Time 2	Time 3	Time 4
TREI				
Control	4.49 (.98)	4.57 (1.06)	4.43 (.99)	4.40 (1.41)
Experimental	4.38 (.96)	4.27 (1.19)	4.18 (.99)	3.94 (1.34)
Total	4.43 (.97)	4.42 (1.14)	4.30 (.99)	4.17 (1.38)
EDE-Q				
Control	70.34 (32.18)	67.01 (32.93)	64.33 (32.73)	61.56 (27.23)
Experimental	67.20 (32.13)	61.40 (32.16)	57.30 (33.17)	57.68 (29.38)
Total	68.77 (32.08)	64.20 (32.46)	60.81 (33.03)	59.62 (28.30)
EDI-BD				
Control	4.57 (1.67)	4.54 (1.74)	4.56 (1.79)	4.52 (1.83)
Experimental	4.78 (1.80)	4.59 (1.82)	4.48 (1.92)	4.48 (1.90)
Total	4.68 (1.73)	4.57 (1.78)	4.52 (1.85)	4.50 (1.86)
Purging				
Control	.53 (1.68)	.18 (.94)	.31 (1.26)	.12 (.81)
Experimental	.35 (1.46)	.45 (1.80)	.26 (1.08)	.26 (1.08)
Total	.44 (1.57)	.32 (1.44)	.29 (1.16)	.19 (.95)
Binge Eating				
Control	.60 (1.30)	.44 (1.12)	.43 (1.23)	.17 (.81)
Experimental	.58 (1.24)	.36 (.90)	.25 (.75)	.19 (.59)
Total	.59 (1.27)	.40 (1.01)	.34 (1.02)	.18 (.71)

Data are presented as Mean (Standard Deviation). TREI: Thinness and Restricting Expectancy Inventory; EDE: Eating Disorder Examination Questionnaire; EDI: Body Dissatisfaction subscale of the Eating Disorders Inventory; Purging: Amount of purging episodes reported over the past week; Binge Eating: Amount of objective binge eating episodes reported over the past week.

Figure 3.1.

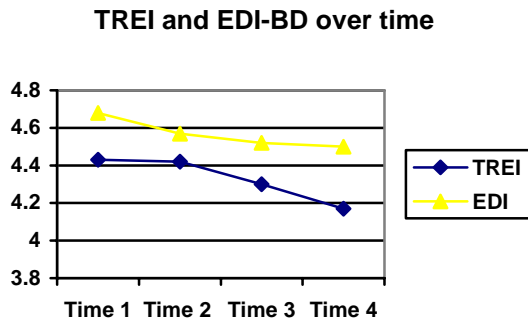


Figure 3.2.

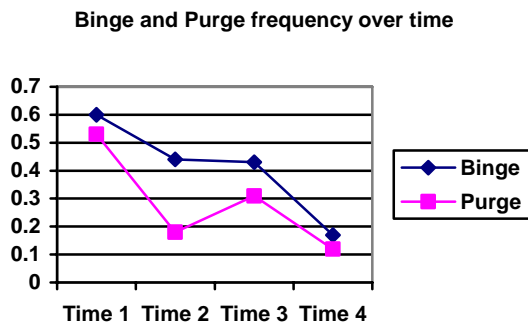


Figure 3.3.

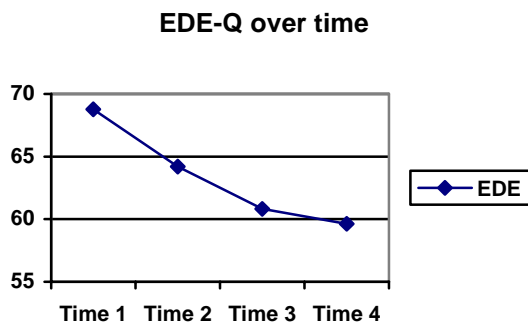


Figure 3.4.

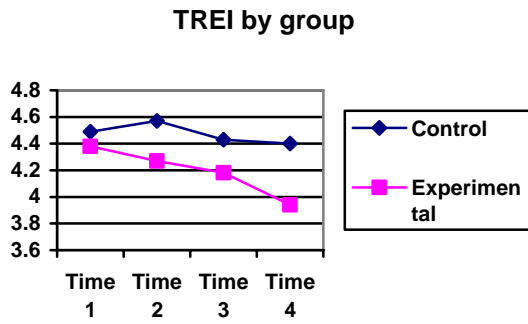


Figure 3.5.

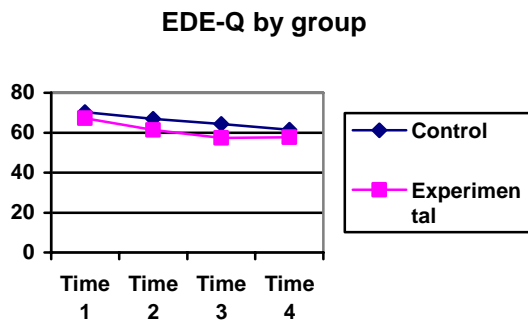


Figure 3.6

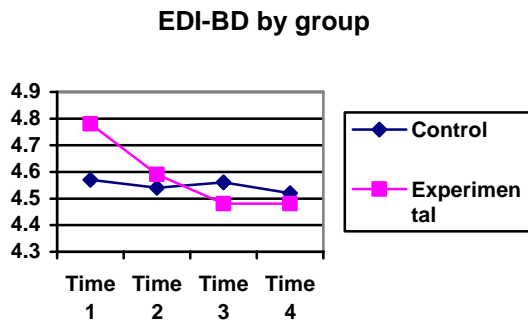


Figure 3.7

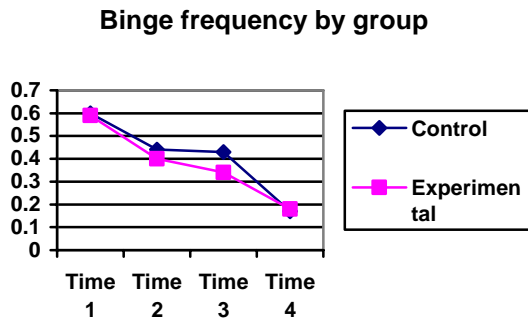
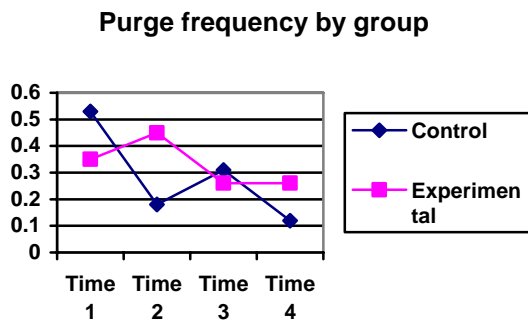


Figure 3.8



Chapter Four

Discussion

This test of an experimental manipulation of thinness and restricting expectancies was undertaken for the following reasons. Expectancies are thought to represent a summary of one's learning history and thus to play a causal role in one's eating and dieting choices. Prior to this study, evidence supporting this theory included the following: Individual differences in thinness and eating expectancies appear to stem from family learning experiences (Annus et al., in press; MacBrayer et al., 2001); thinness and eating expectancies enable one to classify anorexia nervosa, bulimia nervosa, and control patients with 94% accuracy (Hohlstein et al., 1998); the expectancies correlate highly with adolescent and adult symptom reports (Annus et al., in press; Simmons et al., 2002); they predict the subsequent onset of binge eating and purging behavior in adolescent girls (Smith et al., in press); and manipulation of thinness expectancies appeared to disrupt the risk process by reducing expectancies' relations to other risk factors (Fister & Smith, 2004). The aim of this study was to provide further evidence for their causal role by testing whether an experimental manipulation of thinness expectancies produced reductions in body dissatisfaction and in reported symptomatology.

The results do support thinness expectancies' causal role in relation to eating disorder symptomatology. Young adult women underwent one of two manipulations. The control manipulation involved a successful psychoeducational intervention that, as anticipated, produced marked reductions in reported symptoms. The experimental manipulation was constructed to target thinness expectancies more specifically. That condition produced a marked reduction in thinness expectancies and also produced a marked reduction in symptom reports. Most importantly, the experimental condition produced greater reductions in thinness expectancies and body dissatisfaction than did the successful control manipulation.

Thus, we were able to show that our three-session expectancy manipulation affected expectancies, body dissatisfaction, binge frequency, purge frequency, and EDE-Q total scores over a four week period. The manipulation had a greater effect on thinness expectancies and body dissatisfaction than a successful psychoeducational manipulation. We chose the high hurdle of an established, successful control intervention in order to demonstrate not just that thinness

expectancy manipulation affected symptom reports, but that the effect was pronounced and of likely importance.

The linear trend interaction for EDE-Q total scores was not significant, suggesting that although disordered eating decreased over time, there was no difference in the degree of this decrease between the experimental and control conditions. At the same time, the results did show that participants with a significant reduction in their expectancies reported a larger reduction in their EDE-Q total scores. Binge eating frequency also reduced significantly for both groups: here, too, the thinness expectancy manipulation produced symptom reduction, but not greater symptom reduction than produced by the psychoeducational intervention.

Our finding that the EDE-Q total score and binge eating frequency were not affected more strongly by the expectancy manipulation than the psychoeducational condition may also have represented limitations to our designed intervention. Participants found the experimental tapes significantly less believable than the control tapes. On the one hand, we anticipated this finding because the intent of those tapes was to alter established beliefs. One should anticipate that some women will view expectancy-challenging evidence, which is likely inconsistent with their previously formed expectancies, with some skepticism. On the other hand, to the degree that participants doubted the message undermining expectancies, the intervention may not have been as successful as it could have been. If so, this study may have underestimated the true effects of expectancy manipulation. Perhaps there are more effective ways to alter expectancies. Future studies may address this possibility.

One important limitation of this study is that it does not address the treatment of women with anorexia nervosa or bulimia nervosa. Our intent was to support a causal theory by manipulating expectancies to produce a change in outcomes; it was not to test an intervention designed for identified, clinical samples. Although the participants we selected were high on their endorsement of thinness expectancies, they were not anorexia nervosa or bulimia nervosa patients. Individuals with those disorders may have reacted differently to such a manipulation than our present sample. On the other hand, the present sample did endorse disordered eating behaviors, such as binge eating and purging, at a substantial rate, suggesting that individuals with significant levels of disordered eating behaviors would respond to the manipulations in a similar way.

The present study provides further evidence for the causal role of expectancies in relation to eating disordered behavior, similar to findings with expectancies in relation to other behaviors (Brandon et al., 1996; Darkes & Goldman, 1993; Kirsch, 1999; Smith & Goldman, 1994). However, replication in other experimental studies is needed, as is a test of manipulating expectancies for negative reinforcement from eating (Hohlstein et al., 1998). The present study also raises the questions of whether addressing specific types of thinness expectancies may affect symptoms more, and of whether and how personality factors may play a role in individual response to expectancy manipulations.

Should evidence for the role of expectancies in the etiology of eating disorders continue to accrue, it may be useful for future research to examine the utility of including specific expectancy challenges in treatment. Currently, cognitive behavioral therapy (CBT) for bulimia nervosa, as described by Fairburn, Marcus, and Wilson (in Fairburn & Wilson, 1993), does give a few examples of expectancies of thinness expectancies as possible targets for cognitive restructuring but does not specifically direct the clinician to elicit these expectancies¹. Although CBT for bulimia nervosa has a large amount of evidence in support for its efficacy (Fairburn, 2002), integrating more specific expectancy challenges into this treatment may further enhance its efficacy.

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¹ The manual notes that underneath problematic thoughts, such as “I feel fat”, are “certain characteristic attitudes and assumptions. Typical examples include the view that all the patient’s problems will be solved once she reaches her goal weight; that all her difficulties are a result of her eating (or weight) problem; that people who are thin are happy and successful...” (Fairburn, Marcus, & Wilson, 1993, pp. 387-388). The view that “people who are thin are happy and successful” may be an indirect statement of the expectancy “If I were thin, I would be successful”.

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Smith, G.T., Spillane, N.S., & Annus, A.M. (in press). Implications of an emerging integration of universal and culturally-specific psychologies. *Perspectives on Psychological Science*.

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