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BODY AND AFFECT WORDS: VALENCE, COGNITIVE SPECIFICITY, AND

TEMPORAL CHANGE AMONG YOUNG WOMEN

by

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Abstract

Attentional biases and extreme attitudes have been linked to schematic functioning and development in depression and eating disorders. Previous research concerning attentional biases toward schema-congruent material in depression and eating disorders has, for the most part, focused on negatively valenced emotion and body weight/shape material, respectively. The present study employed a stimulus word list, comprised of 52 words that was compiled from Brittlebank, Scott, Williams, and Ferrier (2003), and Cassin and von Ranson (2005) to assess extreme attitudes toward schema congruent material. The sample was comprised of 60 female high school students who participated in the video series *Turning Points for Teens: Ontario Community-Based Treatment for Adolescent Eating Disorders* (Davis et al., 2004), as well as 209 female university students. Participants rated each word according to valence (i.e., *"very positive"* to *"very negative"*). These valence ratings, in combination with measures of body image and eating concerns, affect, depression, and self-esteem were employed to explore the evocative nature of schema-congruent material. Hierarchical multiple regressions indicated that there was a relationship between scores on the Eating Disorder Examination Questionnaire (EDE-Q), body mass index (BMI) and the valence and extremity ascribed to body-related stimuli. In contrast, scores on the PANAS Positive Affect Scale were related to the valence ratings ascribed to affect-related words. Furthermore, self-esteem acted as a moderating factor in the relationships between the scores reported on the psychometric measures and the ascribed word valence ratings. Lastly, comparison of pre- and post-intervention scores indicated that participants reported significant reductions in eating and body image concerns, and rated Thin Body stimuli more moderately following participation in the *Turning Points* program.

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Individuals attend to, process, and interpret stimuli according to internal cognitive

structures referred to as schemas. These cognitive structures are defined as a "set of expectations

about events said to have the power to influence speed, consistency, and recall of schema-

relevant information" (Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999, p. 274). Generally,

schemas can be likened to a lens through which individuals experience their world. Individuals

process and operate according to a variety of cognitive sets that pertain to various areas of their

existence (Rector, Segal, & Gemar, 1998). These sets can relate to a general and overarching

aspect of the individual's being such as the sense of self, or they can be more specific in

reference. The functioning of schemas has been linked to the symptoms and the maintenance of

such psychological disturbances as eating disorders and depression.

The concept of schema has been widely applied to the study and understanding of

depression (Rector et al., 1998). This application is congruent with Aaron Beck's model of

depression, which posits that dysfunctional cognitions are central to the maintenance of the

disorder (Beck, 1976). According to Beck, in those suffering from depression, a negative self-

schema is active (Blankstein & Segal, 2001). Beck explains that the depressive schema develops

early in childhood but does not surface until it is activated by aversive circumstances (Beck,

Rush, Shaw, & Emery, 1979). An active negative self-schema influences which stimuli the

individual attends to, as well as how they process, interpret, store, and recall information (Dozois

& Dobson, 2003). These negative thought patterns result in a pessimistic view of the self and of

one's competence which, in turn, is related to central features of depression such as negative

affect, extreme self-focused attention, rumination, and an increased sense of hopelessness

(Blankstein & Segal, 2001).

Recent research has shown that the activation of the negative self-schema in depressed

individuals has a prominent effect on the attention to, and the processing of, self-referent

information (Rector et al., 1998). Along with a self-deprecating view, depressed individuals

demonstrate a strong orientation toward self-referent information (Blankstein & Segal, 2001).

These individuals attend to negative information that is congruent with their negative self-

schema (Blankstein & Segal, 2001). Furthermore, negative self-referent ideas are exaggerated

while positive self-concepts are ignored (Beck, 1967; Beck et al., 1979.). Lastly, in ambiguous

situations, depressed individuals are more likely that non-depressed controls to interpret

information in a negative manner. This pattern becomes more pronounced with each additional

depressive episode (Dozois & Dobson, 2003)

Similar to research concerning depression, schematic functioning has been linked to the

etiology and maintenance of eating disorders and body dissatisfaction (Thompson et al., 1999;

Troop & Bifulco, 2002). However, rather than emphasizing the self-schema, eating disorder

research has focused on the body-schema. This cognit᛿ ᛿structure᛿ ᛿ ᛿ to the lens through

which individuals process and interpret body-rel᛿ ᛿᛿ (Powell & H᛿᛿᛿᛿ 1999;

Thompson et al., 1999). Among people wi᛿ ᛿ating disorders and high levels of body

dissatisfaction, the body-schema ᛿᛿᛿ ᛿nes dysfunctional and results in negative body image

(Bekker, Croon, & Vermaas ᛿002). Body image is closely related to the schema and is defined

as the "internal view ᛿f how we look, how we feel about our looks, and how we think we appear

to ᛿thers" ᛿T᛿ ᛿mpson et al., 1999, p. 3). In those with eating disorders, and particularly anorexia

nervosa, patients engage in severe focusing on body characteristics, food, and perfectionistic

patterns of thinking and behaving (Fassino et al., 2001).

Several studies have demonstrated the similarities in cognitive functioning in depression

and eating disorders (Cooper & Hunt, 1998; Formea & Burns, 1996; Stice & Bearman, 2001;

Waller, Dickson, & Ohanian, 2002). Cooper and Hunt (1998) explain that both disorders are

characterized by negative core beliefs. These core beliefs determine underlying assumptions the

individual uses to understand information about weight and shape in the case of eating disorders

(Cooper & Hunt, 1998), and information about emotion and self-worth in depression (Philips,

Tiggemann, & Wade, 1997). Theories that attempt to explain the relationship between

depression and eating disorders often explore the process of internalizing the thin-ideal, body

dissatisfaction, disordered eating behaviors and resulting depressive symptoms (Stice &

Bearman, 2001; Waller et al., 2002). Some researchers hypothesize that eating disorders and

body dissatisfaction serve as a precursor to depression (Stice & Bearman, 2001). Symptoms

associated with eating disorders, such as high levels of body dissatisfaction, dieting, and purging

behaviors leave the individual suffering from feelings of guilt and shame as well as frustration

over failing to control their weight and eating behaviors (Stice & Bearman, 2001). As well as

acting as a feature of eating disorder pathology, depressive symptoms maintain eating disorder

behavior. This relationship explains the high rate of comorbidity amongst these two disorders

(Phillips et al., 1997; Stice & Bearman, 2001).

Schematic thinking has also been linked to attentional biases for a variety of conditions

such as Generalized Anxiety Disorder (GAD), mood disorders (Laberge, Cash, & Brown, 1998),

physical conditions, eating disorders, and depression (Ainsworth, Waller, & Kennedy, 2002;

Danion, Kauffmann-Muller, Grange, Zimmermann, & Greth, 1995; Fortune et al., 2003;

Taghavi, Dalgleish, Moradi, Neshat-Doost, & Yule, 2003). Attentional biases refer to how an individual selects which stimuli will be processed and attended to (Thompson et al., 1999). Additionally, cognitive biases explain how prior outlooks and beliefs influence how the individual interprets information and situations. To determine the existence of an attentional bias toward a type of stimulus, researchers observe which information the subject attends to as well as the duration of attention.

Attentional biases are commonly investigated using the Stroop colour naming paradigm, the dichotic listening task, or the visual dot-probe task. The Stroop task requires the participant to identify the colour in which the stimulus word is printed, while ignoring the meaning/content of the stimulus (Ben-Tovim, Walker, Fok, & Yap, 1989). The dichotic listening task requires the participant to identify words that they hear on one of two channels. In this task, schematic subjects identify schema-related words delivered through unattended channels more frequently that non-schematic control subjects (Faunce, 2002). The visual dot-probe task measures the amount of time the participant takes to detect probes that replace stimulus words on a screen. (Reiger et al., 1996). This task is based on the theory that participants will detect the replacement in less time for attended versus non-attended stimuli.

In general, research finds that individuals show an attentional bias to schema c⋯ ⋯ent information. That is to say, information that conforms to prior ou⋯ and beliefs re⋯ ⋯ preference for processing and attention. Taghavi and collea⋯ ⋯ (2003) emplo⋯ ⋯he⋯ iied Stroop task to demonstrate this phenomenon with ⋯ng patients suffering from GAD. In this study, patients exhibited a significant attentic⋯al bias toward threat-related and negative emotional information. Similarly, pati⋯cs with physical ailments demonstrate attentional biases toward disease-specific information on colour-naming tasks (Fortune et al., 2003). The above

described studies demonstrate the presence of attention bias with regard to both physical and mental health conditions.

A large volume of research exists that examines attentional biases to schema congruent information in depression and in eating disorders. Depressed individuals show a cognitive bias toward emotion related information (Danion et al., 1995). More specifically, these patients show cognitive content-specificity that is distinctive and unique to depression (Cho & Telch, 2005). Cognitive content-specificity refers to Beck's hypothesis, which posits that psychological disturbances can be differentiated according to their distinctive cognitive contents (Beck, 1976: Clark & Beck, 1989). For example, content-specificity in depression refers to automatic thoughts and self-appraisals that the individual is inferior to others, is incompetent, or will not succeed. In depression, cognitive specificity results in greater hopelessness, negative self-evaluation and pessimistic global appraisals (Beck & Perkins, 2001). These findings indicate a relationship exists between depressive symptomatology and cognitive processing.

The cognitive content related to depression has been linked to increased attention oriented toward negatively valenced depression-related emotion words (i.e., "guilt", "loneliness") rather than negatively valenced material in general (Danion et al., 1995). Danion and colleagues employed positive, negative, and neutral valenced affective words to examine memory functioning in depression. The valence refers to the affective tone ascribed to a word (i.e., ratings ranging from "very unpleasant" to "very pleasant"). Positively valenced stimuli are rated as "very pleasant", while negatively valenced stimuli are rated as "very unpleasant". The results of this study demonstrated that both depressed participants and non-depressed controls showed significantly greater recall of affectively valenced words (i.e., positive and negative valence) in comparison to affectively neutral words. Similarly, both groups showed greater

recognition for affectively valenced words compared to neutral valenced words (Danion et al, 1995). This study demonstrated that depressed individuals do not demonstrate a cognitive bias toward all negatively valenced stimuli, but rather suggests that depressed individuals show bias toward depression-specific material.

Furthermore, several studies have failed to detect cognitive content specificity in sub-clinical populations. For example, Yovel and Mineka (2004) employed memory tasks followed by a Stroop interference task to examine schematic processing in non-clinical undergraduate students. The study employed anxiety-related, depression-related, and neutral stimulus words to examine mood-congruent biases. The sub-clinical undergraduate students did not demonstrate significant cognitive bias on tests of memory (i.e., greater encoding or recall) or on the Stroop task toward the anxiety or depression-related words. These observations suggest that cognitive content-specificity may be related to clinically significant levels of psychological disturbance rather than to sub-clinical levels of anxiety or depression.

As previously discussed, research suggests that cognitive bias and improved recall of schema-congruent material in depressed patients does not apply to all negatively valenced stimuli (Danion et al., 1995). Rather, these individuals are biased specifically toward depression-related words such as "failure", "hopeless", and "guilt"(Watkins. ' ·· ., Williamson, & Fuller, 1992). Watkins and colleagues (1992) employed a set   ,rds designated either sad, neutral or positively valenced to examine emo'' ,n-congruent memory i   , ession. The findings of this study indicated that clinical'; depressed individuals showed significantly greater recall of depression-related (:.·   .,ords. In comparison, non-depressed controls recalled a significan:!· ...ater number of positively valenced words (Watkins et al., 1992). These obser\ ..:ons support the notion that individuals are inclined to process specific schema-

congruent material more readily than information that does not conform to their mood and their self-concept. In the case of depression, individuals seek information that is congruent with their negative self-schemas, whereas non-depressed controls do not. Although there has been some disagreement in the literature concerning cognitive specificity in depression, many studies have shown biases toward emotion-congruent information in clinically depressed populations (Beck et al., 2001, Beck, Benedict & Winkler, 2003, Leung & Poon, 2001, Watkins et al., 1992).

Furthermore, Beck's cognitive-specificity hypothesis appears to be evident in children and adolescents. Schniering and Rapee (2004) examined the relationship between negative automatic thoughts and psychological disturbances in clinical and non-clinical children and adolescents. This study employed the Children's Automatic Thoughts Scale (Schniering & Rapee, 2002) to examine automatic thoughts regarding physical threats, social threats, personal failure, and hostility. The results of this study indicated that depressed youth experienced a significantly greater number of automatic thoughts concerning personal failure. This study demonstrated a significant relationship between depression-specific cognitive patterns, and cognitive and behavioral symptoms of depression, while supporting the existence of content-specific cognitive processing among depressed youth (Schniering & Rapee, 2004).

In addition to the distinctive quality of these disorder-specific processing patterns, attentional biases and cognitive style have also been linked to the risk of relapse of depressive symptoms (Wenzlaff, Rude, Taylor, Stultz, & Sweatt, 2001). Wenzlaff and colleagues (2001) employed an imbedded word task (IWT) to examine attentional biases in depressed, never-depressed and at risk individuals. The IWT contained 10 positive, 10 negative, and 10 neutral valenced words. Following the IWT, the participants rated themselves on 24 adjectives, including nine depression-specific words (e.g., blue, discouraged, miserable) based on their

current feelings. Half of the participants were given a cognitive load (i.e., asked to hold an eight-digit number in memory) before completing the IWT. The results of this study showed that depressed individuals identified a significantly greater number of negative words in the IWT, while never-depressed participants identified a greater number of positive words. When the at-risk group was exposed to the cognitive load, they identified a greater number of negative words. Without the cognitive load the at-risk participants identified more positive words (Wenzlaff et al., 2001). Furthermore, currently depressed individuals reported more negative personal ratings on the adjectives. The results of this research supports the cognitive content-specificity hypothesis with regard to the negative personal ratings and demonstrates how exposure to negatively valenced words activates depressive-schemas in depressed and previously depressed individuals (Wenzlaff et al., 2001). In combination, these researchers propose that this cognitive-specific processing and schematic activation is related to the risk of subsequent depressive episodes.

When addressing cognitive processing in eating disorders, researchers often differentiate between biases toward food-related stimuli and body shape/weight stimuli (Dobson & Dozois, 2004). Dobson and Dozois (2004) reviewed the findings of recent research that employed the Stroop task to examine cognitive functioning in eating disorders. The results of this review identified three groups commonly identified in eating disorder research: Bulimia, anorexia, and dieting/restrained eating (Dobson & Dozois, 2004). Restrained eaters are individuals who often exhibit sub-clinical levels of disordered eating behaviors (Faunce, 2002). The summary of recent findings indicates that, compared to control subjects, bulimic patients demonstrated significantly greater cognitive interference in response to food-related stimuli on the Stroop task. Anorexic patients on the other hand demonstrated significant cognitive interference in response to body

and shape-related stimuli (Dobson & Dozois, 2004; Sackville, Schotte, Touyz, Griffiths, &

Beaumont, 1998).

Several researchers have hypothesized that individuals exhibit cognitive bias as a reaction

to threatening material (Ainsworth et al., 2002; Dobson & Dozois, 2004). This hypothesis

explains supports the notion that individuals suffering from bulimia, show bias toward

threatening food stimuli, while those with anorexia find body and shape stimuli more threatening

(Dobson & Dozois, 2004; Perpina, Hemsley, Treasure, & de Silva, 1992). In both bulimic and

anorexic populations, individuals showed a cognitive bias on a dot probe detection task toward

schema-congruent stimuli (i.e., material describing a "fat" physique). Similar to the above

discussion of food and body words, these individuals oriented their attention toward threatening

stimuli (i.e., fat) while ignoring material that describes a thin physique (Ainsworth et al., 2002;

Williamson, 1996). These findings support Beck's cognitive-specificity model which posits that

individuals experience automatic thoughts and appraisals directly related to their diagnos. '   .k

& Perkins, 2001). Specifically, the cognitive content distinctive to bulimia and anorexia concerns

food and body shape respectively, while both groups display cognitive content related to a fat

physique.

Cognitive specificity and cognitive interference are also referred to as indicators of the

degree of eating disturbance. Dobson and Dozois (2004) review findings of several studies

se findings indicated that among samples of bulimic, anorexic, and dieting individuals,

cognitive interference was significantly correlated with symptom severity. As eating disorder-

related symptomatology decreased, the degree of cognitive interference also decreased. This

review indicated that although there is some disagreement in the research, several studies found

that restrained eaters or dieters did show cognitive interference with regard to both food and

body-related stimuli (Dobson & Dozois, 2004; Faunce, 2002; Green & Rogers, 1992; Jansen, Huygens, & Tenney, 1997; McFarlane, Polivy, & McCabe, 1999). However, within this group, individuals exhibited significantly less cognitive interference in comparison to their clinical counterparts (i.e., those who met the diagnostic criteria for either anorexia or bulimia), and are not always discernable from normal controls on the basis of cognitive processing. Following their review of the literature, Dobson and Dozois (2004) indicated that there is a need for future research to differentiate between degrees of restraint among sub-clinical dieters. This definition between high, moderate and low restricted eaters may be beneficial in studying any difference in cognitive patterns between various levels of restricted eaters as well as any difference between those who exhibit sub-clinical disordered eating patterns and healthy controls.

Cognitive bias and cognitive interference have also been linked to recovery. Dobson and Dozois (2004) indicate a greater degree of cognitive interference represents a higher degree of body-schematic dysfunction. Within recent research, changes in cognitive bias have been employed as a measure of treatment response. A decrease in attentional bias to disorder-congruent material (i.e., food or body stimuli) following treatment has been interpreted as an indicator that the patient's cognitive set has successfully modified which, in turn, results in a decrease in eating disorder-related pathology and a decreased risk of relapse (Dobson & Dozois, 2004).

It is common for individuals who display psychopathologies such as depression and eating disorders to engage in rigid thinking patterns with dichotomous views (Teasedale et al., 2001; Wetzel, 1976). Engaging in this style of rigid, black-or-white cognitive pattern is conducive to the development of extreme attitudes. These extreme attitudes pertain to the individual's cognitive set and affect the processing and interpretation of schema-related material.

Teasedale and colleagues (2001, p. 354) theorize that extreme attitudes are the result of "rapid, automatic information processing" that produces inflated cognitions. One method used to investigate extreme attitudes involves rating stimuli on a continuum from "*extremely positive*" to "*extremely negative*", or rating statements on a continuum from "*strongly agree*" to "*strongly disagree*" (Beevers, Keitner, Ryan, & Miller, 2003). This procedure requires participants to make an evaluation of either schema-related or neutral material. Extreme or dichotomous response styles occur when individuals consistently rate stimuli as either "*extremely positive*" or "*extremely negative*", and fail to provide more moderate or neutral ratings.

In depression, individuals often exhibit more extreme reactions toward schema-congruent stimuli. When asked to give an emotional valence rating for stimulus words, depressed individuals rate negative emotion words as more extremely negative relative to control subjects (John, 1988; Schifano & Curran, 1994). Furthermore, unlike non-depressed control subjects, depressed individuals do not rate positive emotion words as extremely positive. Following this pattern, the data suggests that extreme attitudes are related to an increased sensitivity toward disorder-specific information. Within the depressed population extreme attitudes have been used to differentiate between those who present a high risk of suicide and those who are a low to moderate risk (Wetzel, 1976). Although extreme attitudes toward the desirability of life did not differentiate between those who are depressed/non-suicidal and those who are depressed/suicidal, high suicide risk individua ....ed life as significantly less desirable compared to subjects exhibiting low levels of suicide risk.

Moreover, more frequent extreme scores of depressed individuals on 7-point Likert scale test items measuring attributional style are predictive of relapse after cognitive therapy (Beevers et al., 2003; Teasdale et al., 2001). This line of research suggests that extreme attitudes in an

extremely depressed pattern (i.e., internal, stable, and global attributions) leaves formerly

depressed patients at a greater risk of relapse over an 8-week follow up period post-treatment. In

addition, more extreme scores predict earlier decline into depression. Lastly, both Teasdale and

colleagues (2001), and Beevers et al. (2003) observed a relationship between the extreme

endorsements and response type in depressed individuals compared to controls. The depressed

subjects reported more extreme agreement with dysfunctional material and more extreme

disagreement toward functional items. The opposite pattern was observed in control subjects.

Although the relationship between extreme attitudes and body dissatisfaction remains

largely unexplored, it is possible that the cognitions of those with high body dissatisfaction will

be not unlike that of individuals experiencing depressive symptoms. Since Teasedale et al.

(2001) point out that extreme attitudes are the result of a general and stable response style, it is

possible that people with a negative body image, like those experiencing depression, will also

engage in extreme responding toward schema-specific material. These individuals adopt extreme

appearance standards when they internalize an unrealistic thin ideal (Stice & Bearman, 2001).

Similar to those experiencing depression, body image disturbance involves dysfunctional,

automatic processing that will lead to extreme and exaggerated attitudes toward food and body

related information.

In addition to the presence of rigid thought patterns and extreme responding, recent

research has begun to explore the relationship between self-esteem, body mass index (BMI) and

cognitive processing. Self-esteem is related to the occurrence and maintenance of restrained

eating and anorexia and bulimia nervosa (McFarlane, McCabe, Jarry, Olmstead, & Polivy,

2000). McFarlane and colleagues (2000) employed several measures of state and trait self-

esteem (i.e., the State Self-Esteem Scale, Heatherton & Polivy, 1991 and the Rosenberg Self-

Esteem Scale, Rosenberg, 1989, respectively) as well as the Weight and Shape Self-Esteem

Inventory (Geller et al., 1997) to examine weight-related self-evaluation in an eating disordered

population. The findings of this study indicated that those with eating disorders reported lower

state and trait self-esteem compared to the restrained and unrestrained eating groups. The eating

disordered group also reported a greater degree of negative weight-related self-evaluation as well

as greater appearance, social, and performance weight-related self-evaluations (McFarlane et al.,

2000). These findings indicate that a relationship exists between self-esteem and weight-related

cognitions.

Contemporary studies also indicate that self-esteem is related to body image, where

women with higher self-esteem report more positive body image scores (Jones & Buckingham,

2005). Jones and Buckingham (2005) examined the relationship between self-esteem, body

esteem, and social comparison among undergraduate women. The participants were designated

as either high or low self-esteem according to pre-test scores on the Rosenberg Self-Esteem

Scale. Participants were exposed to one of 20 stimulus photographs of a female which had

previously been rated for attractiveness. These photographs served to induce either an upward or

downward comparison, or were given a control condition photograph. Following an impression

formation exercise where participants were asked to report their first impression of the woman in

the photograph, participants completed measures of body esteem, mood, internalization,

contingencies of self-worth, and to indicate their perceived similarity to the woman in the picture

on a 4-point Likert scale. This research supports self-esteem as a moderating factor in

attractiveness comparisons (Jones & Buckingham, 2005). The moderator model indicates that the

size of the correlation between two variables depends on the level of a third variable (i.e., an

interaction) (Tabachnick & Fidell, 2001). In this case, the correlation between body esteem and

social comparison depended on the level of self-esteem (i.e., high or low). Those participants high in self-esteem experienced higher body esteem following the upward comparison condition than following the downward comparison condition. In contrast, those low in self-esteem reported higher self-esteem following the downward comparison condition (Jones & Buckingham, 2005). These findings support the relationship between an individual's overarching self-concept (i.e., self-esteem) and the evaluation of attractiveness.

Furthermore, with regard to self-perception and evaluation, research that employed thin and plus-sized images supports a relationship between self-esteem, restrained eating, and weight/shape related images (Mills, Polivy, Herman, & Tiggemann, 2002). Mills and colleagues (2002) examined the relationship between self-evaluation and eating behavior following exposure to photographs of either thin or moderately heavy (i.e., plus-size) models among undergraduate women. The participants were asked to rate the advertisements depicting either thin or plus-size models or a control image on a 9-point Likert scale on the following criteria: the attractiveness of the advertisement, of the model, how similar they felt they were to the model, how effective they felt the advertisement was, the age group the advertisement applied to, and how the advertisement made them feel. Following these ratings, the participants completed measures of dietary restraint, mood, state self-esteem, and indicated their current and ideal body size according to a range of female silhouettes. Findings from this study indicate that restrained eaters reported significantly lower state self-esteem than unrestrained eaters (Mills et al., 2002). Furthermore, there was a significant interaction between current and ideal body size, and the type of stimulus image the participants were exposed to. When restrained eaters were exposed to images of thin models, they described a thinner ideal body and perceive themselves as thinner (i.e., appearing closer to the thin ideal). This relationship was not present for the non-restrained

eaters (Mills et al., 2002). These findings suggest that individuals higher in dietary restraint may be more likely to internalize the "thin ideal" and experienced preferential reactions to stimuli that depict thin body images.

With regard to eating disorders, research supports a moderator model such that negative core beliefs (as assessed by self-esteem measures) act as a moderating variable in the relationship between eating disorder-specific cognitions and the occurrence of eating disorder behaviors (i.e., purging behaviors) (Hughes, Hamill, van Gerko, Lockwood, & Waller, 2005). Hughes and colleagues (2005) examined the relationship between self-esteem, eating disorder symptomatology and body mass index (BMI) among women with eating disorders. The results of this study indicated that self-esteem moderated the relationship between eating disorders-specific cognition and BMI, where those higher in weight concerns were higher in BMI for individuals who reported higher negative core beliefs (i.e., lower self-esteem) (Hughes et al., 2005). Furthermore, this moderation effect was also significant for predicting the frequency of purging behaviors (i.e., vomiting), where those higher in eating concerns reported a higher frequency of vomiting in the presence of greater negative core beliefs (Hughes et al., 2005). These findings indicate that self-esteem is related to weight and eating concerns among those with negative core beliefs.

Similar to self-esteem, BMI appears to be related to affect and body satisfaction. Depression, and specifically anhedonia, is prevalent among those higher in BMI (Bulik, Sullivan, & Kendler, 2002). Pagoto and colleagues (2006) examined the relationship between BMI, engaging in rewarding activities, and depressive symptomatology . The results of this study indicate that an increase in anhedonic symptoms among obese women was associated with a reduced involvement in pleasurable activities and fewer positive reinforcers (Pagoto, Spring,

Cook, McChargue, & Schneider, 2006). With regard to body dissatisfaction, higher BMI is predictive of a women's level of body dissatisfaction (Jones & Buckingham, 2005). Among adolescents, lower BMI is related to more positive self-evaluations concerning weight and appearance (Ivarsson, Svalander, Litlere, & Nevonen, 2006). However, these researchers also found that in adolescent females, "lower than normal" (i.e., underweight) BMI was correlated with depression while higher BMI (i.e., overweight) was related to low self-esteem.

<center>The Present Study</center>

The present study examined the relationship between depression, body dissatisfaction, and cognitive patterns in young women. In keeping with findings using the Stroop colour naming task with this population, it was hypothesized that individuals would report increased emotional reactions toward schema-congruent stimuli. The present research examined ratings for both positive and negative material rather than remaining focused solely on negatively valenced stimuli. Specifically, participants who experienced depressive symptoms were expected to demonstrate a stronger affective reaction (i.e., more extreme valence ratings) toward negative emotion related words while those who experienced a high degree of body dissatisfaction were expected to demonstrate a stronger affective reaction toward negative body related words while ignoring positive body related words. In keeping with past findings (Bone et al., 2005; Yovel & Mineka, 2004), individuals low in depressive symptoms and body dissatisfaction were expected to report more positive affective reactions toward emotion/positive and body/positive stimulus words respectively. For the purposes of this study, the degree of affective reaction was operationally defined as the extremity of the valence ratings of stimulus words.

Extreme attitudes indicative of a black-or-white style of thinking were operationally defined as a rating of "*very negative*" (-3) or "*very positive*" (3) on a seven-point Likert scale

that reflected how positively or negatively the participant felt about the target word. In addition, in keeping with research conducted by Teasedale et al. (2001) and by Beevers et al. (2003), it was expected that those who exhibited higher levels of depressive symptoms would ascribe more extreme ratings for emotion/negative words relative to those who experienced lower levels of depression. Similarly, those who experienced a higher degree of body dissatisfaction were expected to ascribe more extreme ratings for body/negative words. Given that recent research has supported a relationship between self-esteem, BMI, depression, and body dissatisfaction, the present study examined the possible moderating effects of self-esteem and BMI on the affective ratings of emotion and body-related words.

The second aim of the present study was to evaluate changes in cognitive processing, in the form of changes in word valence ratings over time. Specifically, this study had the opportunity to examine changes among individuals who were exposed to the video series *Turning Points for Teens: Ontario Community-Based Treatment for Adolescent Eating Disorders* (Davis et al., 2004), an intervention designed to reduce the valence ascribed to thin body ideals. Word List valence ratings were obtained before participation in the *Turning Points* program (i.e., pre-treatment), as well as at the termination of the program (i.e., post-treatment). These measures were employed to determine the degree to which the positive or negative value ascribed to body and affect-related material changed following participation in the *Turning Points* intervention. In addition to evaluating the change in word list valence ratings the present study also eva'   changes in scores on psychometric measures of eatin   symptomatolo?v, affect, depression, and self-esteem. Lastly, analyses ·· ᵕre conducted to examine the dᵤgree of satisfaction that participants reportᵤ with regard to their experience of the *Turning Points* program. In addition to ᵤxamining the degree of satisfaction, this analysis also examined the

relationship between satisfaction and change that occurred on outcome measures (i.e., post-intervention psychometric measures).

<div align="center">Method</div>

Participants

Sixty females were recruited from ninth and tenth grade female physical education classes from a Thunder Bay high school. The *Turning Points* program was conducted as one of the health components of the course curriculum. An additional 209 female students were recruited from Introductory Psychology classes at Lakehead University to complete the questionnaire packages. The university students were given a course bonus point in exchange for their participation. Participants were given a letter that described the study and returned a signed consent form (see Appendices A and B).

The overall sample was comprised of two groups: Participants recruited from Introductory Psychology classes at Lakehead University, and participants recruited from ninth and tenth grade high school classes. Age of participants is depicted in Table 1. The majority of the sample described their country of birth as Canada (98.1%), and identified their ethnicity as Caucasian (59.8%).

Table 1

Descriptive Group Characteristics

Group	N	Minimum Age	Maximum Age	M	SD
University	209	18	51	21.54	6.15
High School	60	14	16	14.65	0.68
Total Sample	269	14	51	20.00	6.14

Note. Age is in years.

Materials

Turning Points for Teens: Ontario Community-Based Intervention for Adolescent Eating Disorders (Davis et al., 2004). This intervention program consisted of 14 sessions in which trained group leaders employed video segments that aim to educate young women about healthy lifestyle choices including eating behavior, physical activity, and body image. This treatment program was developed at Lakehead University and was funded by the Ontario Ministry of Health and Long-Term Care from the Health Canada Primary Health Care Transition Fund.

Eating Disorder Examination Questionnaire (EDE-Q; Fairburn & Beglin, 1994; see Appendix C). This 36-item questionnaire employed a self-report format to assess the psychopathology associated with eating disorders. The questionnaire examined eating disorder attitudes as well as the frequency of behaviors associated with eating disorders (i.e., self-induced vomiting, restricting food intake, and over eating). The EDE-Q provides a global score of eating disorder related pathology as well as four subscales that evaluate dietary restraint, eating concerns, shape concerns, and weight concerns (Fairburn & Beglin, 1994). Recent research supports the concurrent and criterion validity for both items and subscales on the instrument (Mond, Hay, Rodgers, Owen, & Beumont, 2004). Furthermore, the EDE-Q shows strong internal consistency (Cronbach's alpha ranging from .78 to .93), and good 2-week test-retest reliability with coefficients ranging from .81 to .94 across the subscales (Carter, Stewart, & Fairburn, 2001).

Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegan, 1988; see Appendix D). This 20-item scale contained the two General Dimension Scales of the PANAS questionnaire: Negative Affect and Positive Affect. Each scale contained 10 items. Participants rated the items according to their emotional experience within the past 28 days. The 5-point

rating scale ranged from "*very slightly or not at all*" to "*extremely*". The PANAS has demonstrated a high level of convergent validity (correlations ranging from .89 to .95) and discriminant validity with correlations ranging from -.16 to -.23 (Watson & Clark, 1994). Furthermore, the PANAS demonstrates sufficient 2-month test-retest reliability, and shows strong correlations to other measures of affect such as the BDI-II (Watson & Clark, 1994).

Rosenberg Self-Esteem Scale (RSE; Rosenberg, 1989; see Appendix E). This 10-item self-report measure evaluated self-esteem and required the participant to rate statements based on her level of agreement. Each item was rated on a four-point scale ranging from "*strongly agree*" to "*strongly disagree*". The following five items were reverse scored: Item 1, 3, 4, 7, and 10. The ratings from all 10 items were summed to calculate a total score, with greater total scores signifying greater self-esteem.

Beck Depression Inventory-Second Edition (BDI-II; Beck, Steer, & Brown, 1996; see Appendix F). This self-report questionnaire consisted of 21 items that measured the severity of recent depressive symptoms. For each item, the participant was required to select one of the four statements that best described their condition during the past two weeks. Each statement option had a designated value ranging from zero to three with higher values representing increased severity of depressive symptoms. The item ratings were summed to compute a total BDI-II score, with higher scores indicating higher levels of depression. Undergraduate students report mean BDI-II scores of 12.56, while those who meet the Diagnostic and Statistical Manual for Mental Disorders, third edition-revised (DSM-III-R) criteria for a mood disorder report a mean score of 26.57 (Beck et al., 1996). Furthermore, this measure shows strong internal consistency for both undergraduate students (α = .93) and for psychiatric outpatients (α = .92) as well as strong 1-week test-retest reliability (r = .93).

Word List (see Appendix G). The Word List was comprised of 52 stimulus words which came from Brittlebank and colleague's (1993) Autobiographical Memory Test (AMT), and from Cassin and von Ranson's (2005) study that examined attentional biases in eating disorders. As described by Williams (n.d.), the cue words taken from the AMT were designated as either negatively toned or positively toned. In both studies (Brittlebank et al., 1993; Cassin & von Ranson, 2005) words were selected that had equal frequency in the English language and that were similar in emotional valence. Williams recommended using a large number of stimulus words to "increase the probability that using parametric tests will be appropriate" (p. 4).

The 68 words that comprise the stimulus set used by Cassin and von Ranson (2005) were selected according to the following five criteria: character length, syllable length, linguistic frequency, familiarity, and valence. To be included in the stimulus set, 70% of the participants in that study's screening process had to designate the word to the correct category (i.e. fat, thin, pretty, ugly, other, or unsure), and 90% of participants had to understand its meaning. Follow-up tests were also conducted to determine that the groups of words (i.e., fat, thin, attractive, and unattractive) were matched on the five previously mentioned criteria.

The stimulus words employed in the present investigation were designated as affect/positive, affect/negative, body/positive or body/negative according to the grouping assignment determined in previous research (Brittlebank et al., 1993; Cassin & von Ranson, 2005). In previous preliminary research (Bone et al., 2005), the Word List was originally comprised of 115 items. The 52 words employed the present study were selected from the original pool of 115 items based on statistical significance. In the original study,   115 words were grouped into five scales through factor analysis. Words were retained in the present study if

they contributed to an alpha coefficient of 0.85 or greater on their respective scale in the original study.

In the present study, each participant rated the words according to valence. Valence ratings reflected how positively or negatively the participant felt about the word. Ratings were made on a seven-point Likert scale, ranging from –3 (*very negative*) to +3 (*very positive*). A rating of zero indicated a neutral valence.

Procedure

The *Turning Points* program was administered to participants in three female physical education classes at a high school in Thunder Bay, Ontario. The program was administered during 1.25-hour classes on consecutive days over two weeks. The students viewed two video segments per class followed by group discussion of the themes portrayed in the particular segments. Fourteen days following the last class, the program facilitators re-administered the questionnaire package to the participants (i.e., 28 days following the administration of the Time 1 package). This period coincides with the 28-day retrospective reporting period of the EDE-Q. Each participant completed a package of questionnaires before beginning the *Turning Points* program (i.e., Time 1) and again upon conclusion (i.e., Time 2). Each questionnaire package was comprised of the following documents: The EDE-Q, PANAS, BDI-II, RSE, and the Word List. Also contained within the package was a letter describing the study and consent forms for both the participant and their parent/guardian (see Appendix A).

With regard to the university participants, a member of the research team visited each of the Introductory Psychology classes at Lakehead University to recruit students for this study. The researcher explained the purpose of the study, and then distributed the questionnaire packages to those students who wished to take part. The students were instructed to complete the consent

form (see Appendix B) and the questionnaires and to return them within 8 weeks to a secure box in the Psychology Department at Lakehead University. Of the 300 packages distributed, 209 (69.7%) were completed and returned.

Treatment of Data

Prior to any analysis, all of the variables were screened to ensure the accuracy of data entry, to determine the amount of missing data, the distribution of each variable, and to assess for univariate outliers. The distribution of each variable satisfied the assumption of normality according to tests of skewness and kurtosis (Tabachnick & Fidell, 2001). Outliers were defined as values with a z-score equivalent of +/- 3.00. Due to the large sample size ($N = 269$), some standardized scores outside of the +/- 3.00 range were to be expected (Tabachnick & Fidell, 2001). However, since only a small number of cases had z-scores in excess of +/- 3.00, the scores were not transformed (refer to Appendix H).

Missing Data

To be included in the analyses, an arbitrary rule of inclusion was set at a maximum 30% of missing items per variable. In cases where missing data did not exceed 30%, missing item scores were prorated from existing responses for each participant on the particular scale (Tabachnick & Fidell, 2001). Appendix I lists the number of participants for whom data were prorated, the number of participants who were excluded, and the final number of subjects analysed on each variable. In addition to the participants who were excluded on the basis of missing data, the data for 2 high school participants were excluded because parental consent forms were not returned. Furthermore, 7 high school participants were excluded from any Time 2 analysis because they did not return the Time 2 (i.e., post-intervention) questionnaire packages.

Results

The results section is comprised of four sections. First, the factor analysis of the Word List is presented according to valence ratings to demonstrate the factor structure and item loadings. Furthermore, the results of t-tests on the valence ratings are presented to determine the significance of each factor. The means, standard deviations, theoretical ranges, and alpha coefficients of the EDE-Q, the PANAS, the RSE, and the BDI-II are presented. Intercorrelation matrices are also presented to demonstrate the relationships between the psychometric measures, and the relationships among the psychometric measures and the factors emerging from the factor analysis. In the second section, hierarchical multiple regressions are presented to demonstrate the relationship between eating attitudes and behaviors, depression, and the affective valence ratings as well as the extremity of valence ratings using body mass index (BMI) and self-esteem as potential moderating variables. Additional analyses are presented to depict the differences among those who are high versus those who are low in self-esteem. Preliminary results of the factor analysis and hierarchical regressions were conducted using the total sample first, and then on the university group excluding the high school group. In comparing the two sets of findings, no appreciable differences emerged in the pattern of results. Therefore, all analyses reported herein utilize the total sample.

In the third section the results of paired t-test analyses are presented to explore the degree of change on the psychometric measures (i.e., EDE-Q, PANAS, BDI-II, and RSE) that occurred amongst the high school participants who participated in the *Turning Points* program. Furthermore, paired t-test analyses were conducted to examine the degree of change that occurred on the word valence ratings. The fourth and final section of the Results explores the

relationship between satisfaction with the *Turning Points* program and the scores on the psychometric variables following the intervention.

Section 1: Factor Analysis

A factor analysis was conducted using the valence ratings derived from the Word List. A principal components extraction with a varimax rotation yielded five interpretable factors in part through examination of the Scree plot. The five factors were labelled as follows: Thin Body, Negative Affect, Positive Affect, Positive Appearance, and Fat Body. Table 2 displays item loadings on the factors. These factors cumulatively accounted for 48.85% of the variance, the structure of which was virtually identical to the results of a previous study on Word List valence (Bone et al., 2005).

Given that the factor structure was obtained using a varimax rotation which maximized the variance of loadings on each of the 5 factors (Tabachnick & Fidell, 2001), additional analysis was conducted to further explore the existing relationships between the five derived word groupings. A second higher-order factor analysis was conducted using scale item means derived from item loadings in the above initial factor structure. Two higher-order factors were extracted and labelled Body and Affect. The factor loadings are depicted in Table 3. Positive Appearance, Positive Affect, and Negative Affect all loaded on the higher-order Affect factor. Thin Body and Fat Body loaded on the higher-order Body factor. In combination, the two higher-order factors accounted for 69.2% of the variance.

Table 2

Varimax Rotated Item Loadings of the Factors Derived from the Word List Valence Ratings

Factor 1		Factor 2		Factor 3		Factor 4		Factor 5	
Thin Body		Negative Affect		Positive Affect		Positive Appearance		Fat Body	
slender	.87	upset	.74	pleasant	.66	desirable	.69	chunky	.83
skinny	.85	weakness	.72	smile	.66	dazzling	.68	flabby	.77
slim	.85	hurt	.71	happy	.66	stunning	.63	enormous	.76
thin	.82	sad	.70	sunny	.63	enchanting	.64	heavy	.74
tiny	.82	tragic	.67	peaceful	.61	eager	.55	chubby	.73
small	.81	worse	.62	pleased	.59	striking	.54	huge	.72
petite	.79	rejected	.58	friendly	.51	appealing	.52		
toned	.56	guilty	.58	joy	.50	glorious	.51		
lean	.49	blame	.56	lovely	.50	charming	.51		
sexy	.37	helpless	.52	hopeful	.49	devoted	.51		
		bad	.44	cheer	.46	glamorous	.49		
				lucky	.43				
				lively	.42				
				stylish	.37				
Eigenvalue 11.1		5.8		3.6		2.9		2.0	

Table 3

Rotated Factor Loadings of the Initial Five-Factor Solution

| | Higher-order Factors | |
| | Factor 1 | Factor 2 |
Original Factors	Affect	Body
Positive Affect	.89	
Positive Appearance	.84	
Negative Affect	-.59	
Fat Body		.90
Thin Body		-.70
Eigenvalue	2.30	1.15

t-tests of Significance

One sample t-tests were conducted to determine whether the mean valence ratings across the words within each derived scale were significantly different from zero (refer to Table 4). The analysis revealed that each of the five factors had mean ratings that were significantly different from zero. Recalling that each item has a maximum possible scale value of +/-3, these findings would suggest that the typical participant ascribed a distinctive affective valence to each of the derived scales. Fat Body and Negative Affect words are negatively valenced, while Thin Body, Positive Appearance, and Positive Affect words are positively valenced.

Table 4

Word List Scale Descriptive Statistics and t-tests for the Mean Difference Equals Zero

Statistic	Thin Body	Fat Body	Positive Appearance	Positive Affect	Negative Affect
Items (*n*)	10	6	11	14	11
Cronbach's Alpha	.92	.88	.84	.85	.87
M	1.31	-1.69	2.13	2.27	-1.99
(SD)	(1.01)	(1.02)	(0.65)	(0.49)	(0.70)
t	21.32	-27.06	53.73	75.61	-46.26
p	< .001	< .001	< .001	< .001	< .001

Note. $N = 269$ participants. *t*-test of the null hypothesis that $H_0 : \mu = 0$. Theoretical range for

subscale $Ms = +/-3$.

Reliability of the Psychometric Measures

The mean and standard deviation of each of the four psychometric measures are

presented in Table 5. The magnitude of these statistics is comparable to that in previous research

(Bone et al., 2005, Carter et al. 2001, Spitzer et al., 1990). Cronbach's alpha coefficients were

calculated to examine the internal consistency of each measure. These coefficients range from

.87 to .96, suggesting a high degree of internal reliability of the measures.

Table 5

Means, Standard Deviations, and Cronbach's Alpha Coefficients for the Psychometric Measures

Variable	Cronbach's Alpha	Number of Items	Theoretical Range	*M*	*(SD)*	*N*
EDE-Q						
Restraint	.85	5	0-6	1.54	1.35	269
Eating Concerns	.82	5	0-6	1.05	1.12	268
Shape Concerns	.93	8	0-6	2.52	1.62	265
Weight Concerns	.86	5	0-6	2.13	1.58	268
Global	.96	22	0-6	1.80	1.29	263
PANAS						
Positive Affect	.89	10	10-50	33.30	7.62	262
Negative Affect	.87	10	10-50	21.48	7.50	262
BDI-II	.88	20	0-63	11.21	7.77	264
RSE	.89	10	10-40	29.87	5.66	268

Note. EDE-Q = Eating Disorder Examination Questionnaire. PANAS = Positive and Negative Affect Schedule. BDI-II = Beck Depression Inventory-II. RSE = Rosenberg Self-Esteem Scale. Higher scores on the EDE-Q, the PANAS (positive), the PANAS (negative), the RSE, and the BDI-II indicate a greater degree of disordered eating attitudes and behaviors, positive affect, negative affect, self-esteem, and depression, respectively.

Intercorrelations Among the Psychometric Measures

Pearson product-moment correlation coefficients were conducted to determine the degree of association among the measures (refer to Table 6). Age and BMI were also included in this

analysis. The subscales of the EDE-Q (i.e., Restraint, Eating Concerns, Shape Concerns, and Weight Concerns) show a high degree of intercorrelation ranging from .67 to .93. Furthermore, the EDE-Q Global score is highly correlated with each of its subscales, with correlations ranging from .84 to .96. Given the significant overlap among the EDE-Q subscales, it was decided to use the EDE-Q Global score as the index for body image and eating concerns in all subsequent analyses.

Body mass index was positively correlated with each of the EDE-Q subscales as well as with the EDE-Q Global score, with correlations ranging from .31 to .44. Heavier participants reported greater body image and eating concerns. Rosenberg Self-Esteem scores negatively correlated with each of the EDE-Q subscales and Global score, with correlations ranging from -.31 to -.55. Participants lower in self-esteem reported greater body image and eating concerns. Both the PANAS Negative Affect scale and the BDI-II correlated positively with the EDE-Q subscales and Global score, ranging from .35 to .54. Participants high in negative affect and depressive symptomatology reported greater body image and weight concerns.

Table 6

Intercorrelation Matrix of Psychometric Measures

	Restraint	Eating Concerns	Shape Concerns	Weight Concerns	Global	PANAS Positive	PANAS Negative	BDI-II	RSE
Restraint	—								
Eating Concerns	.67***	—							
Shape Concerns	.70***	.80***	—						
Weight Concerns	.68***	.78***	.93***	—					
Global	.84***	.88***	.96***	.94***	—				
PANAS Positive	-.05	-.20***	-.16**	-.14*	-.15*	—			
PANAS Negative	.35***	.49***	.53***	.54***	.5?***	-.11	—		
BDI-II	.3. **	.50***	.48***	.50***	.50***	-.39***	.67***	—	
RSE	-.31**	-.50***	-.54***	-.55***	-.53**	.38***	-.52***	-.61***	—
Age	.07	-.05	-.01	.00	.01	-.01	-.07	-.13*	.13*
BMI	.33***	.31***	.38***	.44***	.41**	.04	.17**	.11	-.11

*** .001 significance level, ** significance level, * .05 significance level

Intercorrelations Among Psychometric Measures and Derived Word List Scales

A second Pearson product-moment correlation analysis was conducted to examine the intercorrelations among the psychometric measures and the five derived Word List scales (refer to Table 7). In addition, four new indices of Word List valence were calculated in keeping with the results above (refer to Table 3) concerning the higher-order two-factor solution. The first index, labelled Body Scale, is the mean valence rating of all 10 Thin Body words plus all six Fat Body words (reverse scored to depict congruence of the valence ratings), expressed as a percentage of the maximum possible score (i.e., maximum scale rating of 7 x 16 words = 112, where the likert scale of +/- 3 is recoded to 1 = -3 *strongly disagree* and 7 = 3 *strongly agree*). Thus, for example, a Body Scale score of 100% means the participant assigned the most valence-congruent extreme rating on all 16 Body words, whereas a score of 50% means the participant ascribed a typically neutral valence value to each word. The second index, labelled Extreme Endorsement (EE) Body Scale, represents the percentage of valence-congruent endorsements for body words with the value of EE = 3 expressed as a percent of the maximum possible endorsements over 16 body words. A score of 50% on this scale would, for example, signify that the participant gave an extreme valence-congruent endorsement (i.e., scale value +3) on eight of 16 body words.

The third and fourth new indices, the Affect Scale and Extreme Endorsement (EE) Affect Scale, were calculated on the 36 affect and appearance words in a manner consistent with the calculations of Body Scale and EE Body Scale described above. Specifically, for the Affect Scale, the scale score represents the mean value of all 11 Positive Appearance words plus all 14 Positive Affect words plus all 11 Negative Affect words (reverse scored to depict congruence of

Table 7

Intercorrelation Matrix of Psychometric Measures with Derived Word List Scales

Variable	Thin Body	Fat Body	Body Scale	EE Body Scale	Positive Appearance	Positive Affect	Negative Affect	Affect Scale	EE Affect Scale
Restraint	.29***	-.32***	.35***	.36***	.06	-.05	-.09	.04	.05
Eating Concerns	.36***	-.42***	.45***	.50***	.10	-.01	-.19**	.11	.11
Shape Concerns	.35***	-.44***	.44***	.42***	.08	-.04	-.14*	.07	.05
Weight Concerns	.26***	-.41***	.37***	.38***	.06	-.07	-.12	.04	.03
Global	.34***	-.44***	.44***	.45***	.07	-.06	-.14*	.5	.05
PANAS Positive	-.07	.08	-.08	-.11	.18**	.18**	.08	.12	.10
PANAS Negative	.23***	-.32***	.31***	.35***	.04	-.05	-.15*	.05	.07
BDI-II	.15*	-.29***	.24***	.26***	-.13*	-.19**	-.11	-.10	-.04
RSE	-.29***	.27***	-.33***	-.31***	.06	.11	.10	.03	.0.
BMI	-.07	-.09	-.01	.02	.01	-.04	.04	-.03	.01
Age	-.04	.12	-.09	-.05	.15*	.10	-.06	.14*	.14*

Note: Body Scale = Mean of valence congruent Body words expressed as a percentage of the maximum possible score. EE Body Scale = Percentage of valence-congruent extreme endorsements for Body words. Affect Scale = Mean of valence congruent Affect words expressed as a percentage of the maximum possible score. EE Affect Scale = Percentage of valence-congruent extreme endorsements for Affect words.

*** .001 significance level, ** .01 significance level, * .05 significance level

the valence ratings), expressed as a percentage of the maximum total score (i.e., maximum scale

rating of 7 x 36 words = 252, where the Likert scale of +/- 3 is recoded to 1 = -3 *strongly*

disagree and 7 = 3 *strongly agree*). Finally, the EE Affect Scale represents the percentage of

valence-congruent endorsements for body words with the value of EE = 3 expressed as a percent

of the maximum possible endorsements over 36 body words.

The results of the intercorrelational analysis among psychometric measures and derived

word list scales are presented in Table 7. The EDE-Q scales were significantly correlated with

word valence ratings on the first derived scale, Thin Body words, with correlations ranging from

.26 to .36. As body image and eating concerns increased, participants ascribed an increasingly

positive valence to Thin Body words. Scores on the PANAS Negative Affect scale ($r = .23$) \he

BDI-II ($r = .15$) were also significantly related to word valence ratings on this scale.

As symptoms of depression and negative affect increased, participants ascribed increasingly

positive valence ratings to Thin Body words. Furthermore the RSE ($r = -.29$) was also

significantly correlated with valence ratings on this Thin Body scale, indicating that lower self-

esteem is associated with greater positive valence ascribed to these words.

The EDE-Q scales were also significantly related to the Fat Body word valence ratings

with correlations ranging from -.32 to -.44. This indicates that as participants reported greater

body image and eating concerns, they ascribed an increasingly negative valence to Fat Body

words. Additionally, The PANAS Negative Affect   he BDI-II ($r = -.29$) and the RSE

($r = .27$) were also significantly correlated with the Fat Body valence ratings. Fat Body w   is are

perceived more negatively by participants with lower self-esteem and greater dysphoria. The

magnitude of the above correlations are even more pronounced when correlating psychometric

measures to the higher-order Body Scale and EE Body Scale. These findings would suggest that

individuals with a more salient body schema (i.e., those higher on EDE scales) find schema-congruent words to be more evocative of an affective reaction.

Regarding the affect words and their corresponding derived scales, their correlations with the psychometric measures were smaller and generally non-significant compared to the above observations concerning the derived body scales. However, there is some suggestion of a similar congruence operating between affect words and participants' affective state: higher PANAS Positive Affect scores are positively associated with greater positive valence ratings on Positive Affect Scale. Greater depressive symptomatology (i.e., BDI-II) is negatively associated with Positive Affect.

Negative Affect words also demonstrate congruence between valence ratings of affect words and the participant's affective state. As participants reported increased negative affect, they typically ascribed more negative valence ratings to Negative Affect words. In contrast to Positive Affect words, the valence ratings ascribed to Negative Affect words were also significantly related to body image and eating concerns. Specifically, as participants reported higher scores on the EDE-Q Global, Eating Concerns, and Shape Concerns scales, they ascribed increasingly negative valence ratings to the Negative Affect words.

Section 2: Hierarchical Multiple Regression Analysis

Hierarchical multiple regression analyses were employed to examine the unique predictive contributions of the psychometric me   and to explore the potential pre   of moderating effects (Tabachnick & ridell, 2001). Specifically, the psychometric measures (i.e., EDE-Q, PANAS, BDI-II) were analysed to determine their ability to predict valence ratings within the higher-order derived scales of Body, EE Body, Affect, and EE Affect. Additionally, in and RSE were examined as a potential moderating variables.

In each of the four regression analyses conducted, the psychometric measures were entered in block one in a stepwise selection method. In the second and third blocks, BMI and RSE were entered separately to examine their independent contributions in predicting word valence ratings. In the fourth block, the interaction terms of BMI and RSE with each of the psychometric measures were entered in a stepwise selection method.

Table 8 contains the results of the regression analysis on the body words. EDE-Q Global uniquely predicted 19% of the variance contained within the valence ratings for body words. This was qualified by an RSE x EDE-Q Global interaction term, the results of which are depicted in Figure 1. Participants with low self-esteem (i.e., RSE less than or equal to the distribution midpoint of 29) showed a stronger association between EDE-Q Global and Body Scale valence compared to their peers with higher self-esteem, $R^2 = 18.5\%$ versus 9.5%, respectively. This moderating effect of self-esteem is even more pronounced when predicting word valence ratings in terms of the frequency of extreme valence-congruent endorsements (i.e., EE Body Scale), as depicted in Figure 2, $R^2 = 24.2\%$ versus 7.5% among low and high self-esteem participants, respectively. Thus, the ability of Body words to evoke a stronger affective reaction among individuals with a more salient cognitive schema for body image and eating concerns is greater in the presence of low self-esteem.

Table 8

Hierarchical Multiple Regression Analyses in the Prediction of Body Word Valence

Predictor Variables	β	R^2	ΔR^2	F	p
Body Scale					
EDE-Q Global	.44	.19	.19	63.99	<.001
BMI	-.23	.24	.04	15.32	< .001
RSE	-.11	.25	.01	2.97	.086
RSE x Global	-.47	.26	.01	5.01	.026
EE Body Scale					
EDE-Q Global	.45	.20	.20	67.03	< .001
PANAS Negative	.15	.22	.02	5.50	.02
BMI	-.19	.25	.03	10.73	.001
RSE	-.03	.25	.00	0.23	.636
RSE x Global	-.66	.28	.03	9.80	.002

Note. Body Scale = Mean of valence congruent Body words expressed as a percentage of the maximum possible score. EE Body Scale = Percentage of valence-congruent extreme endorsements for Body words. EDE-Q Global = Eating Disorder Examination Questionnaire Global scale. BMI = body mass index. RSE = Rosenberg Self-Esteem scale. PANAS Negative = Positive and Negative Affect Schedule Negative Affect subscale.
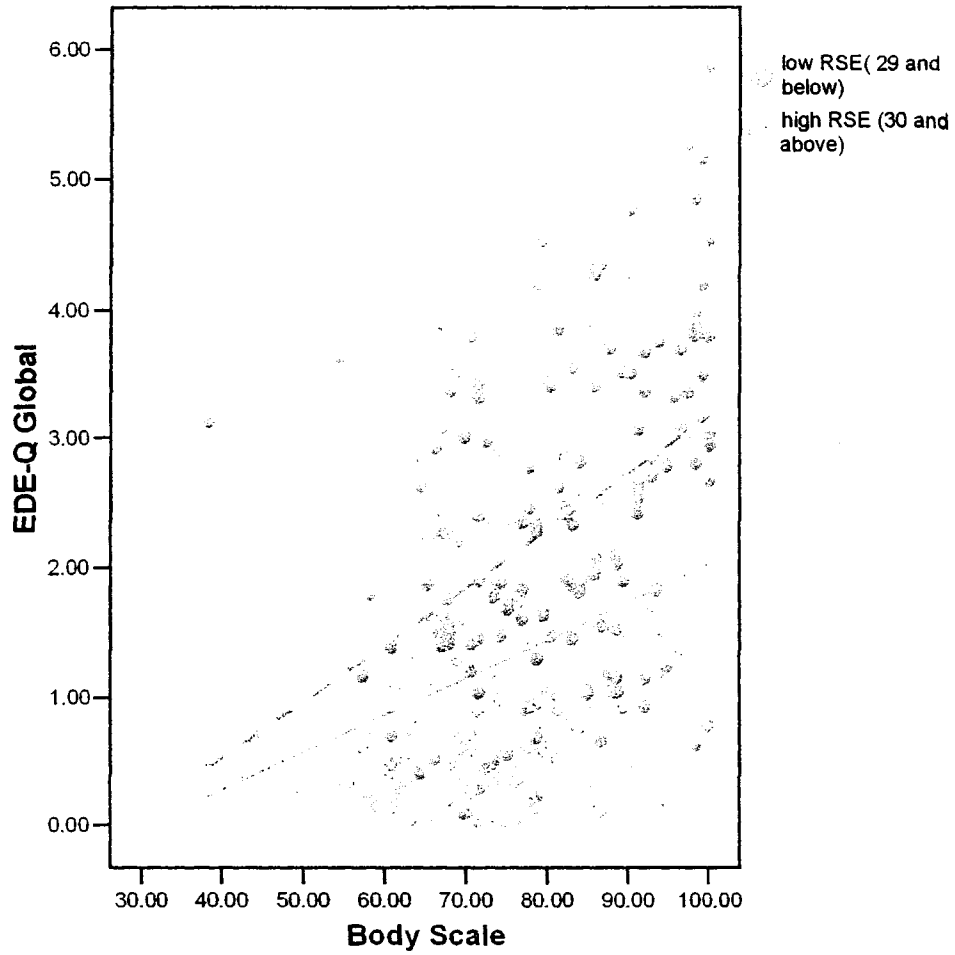
Figure 1. Body Scale word valence plotted as a function of the EDE-Q Global scale and RSE.
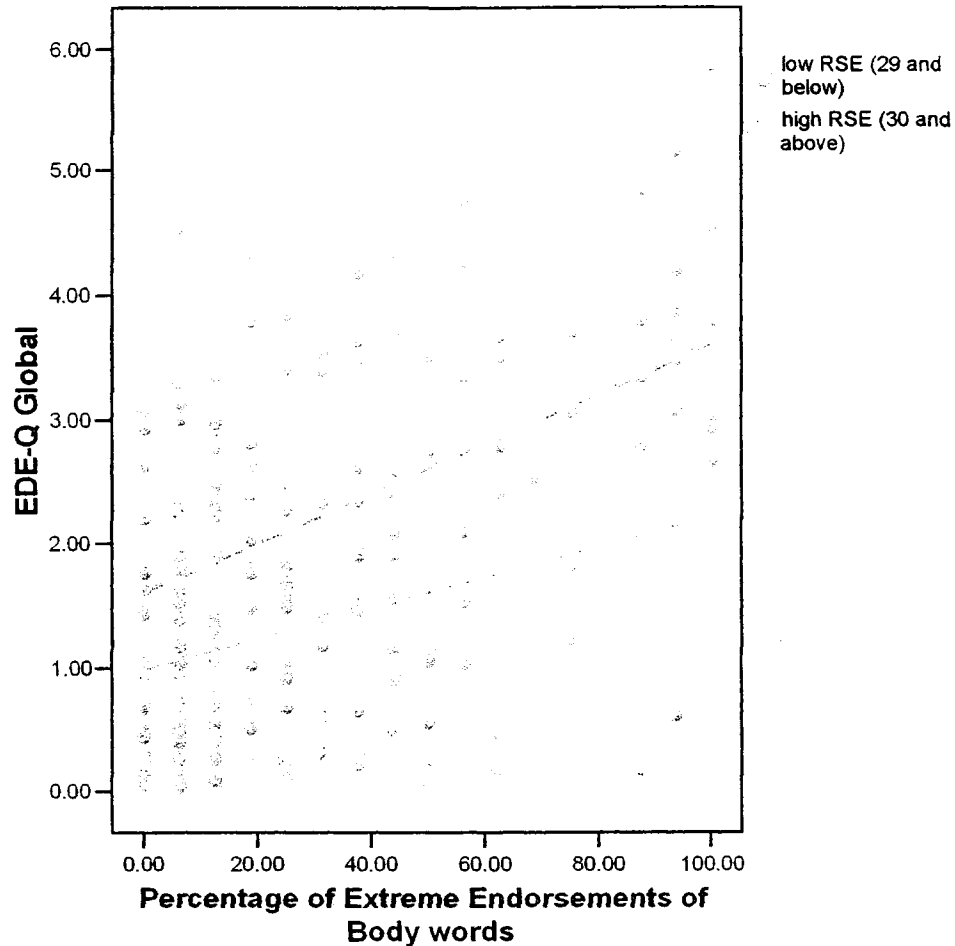
Figure 2. Percentage of extreme endorsement of Body Scale words plotted as a function

of the EDE-Q Global scale and RSE.

Results of the hierarchical multiple regression analyses for affect words showed that only

the PANAS-X Positive made a unique contribution to the prediction of valence ratings contained

within the Affect Scale, explaining a very modest 2% of the variance (refer to Table 9). Turning

to the valence ratings contained within the EE Affect Scale, the RSE x PANAS-X Positive

interaction proved to be statistically significant, again accounting for a modest 2% of the

variance. As depicted in Figure 3, the shared variance on these two variables among high self-

esteem participants is a modest 4.7%, whereby greater Positive Affect is positively related to

more extreme valence-congruent endorsements of the affect words. That same association is

negligible (i.e., $R^2 = .025\%$) among individuals low in self-esteem.

Table 9

Hierarchical Multiple Regression Analyses in the Prediction of Affect Word Valence

Predictor Variables	β	R^2	ΔR^2	F	p
Affect Scale					
PANAS Positive	.12	.02	.02	3.99	.047
BMI	-.04	.02	.00	0.41	.525
RSE	-.02	.02	.00	0.09	.768
EE Affect Scale					
BMI	.01	.00	.00	0.09	.942
RSE	.01	.00	.00	0.03	.866
RSE x PANAS Positive	.21	.02	.02	4.74	.03

Note. Affect Scale = Mean of valence-congruent Affect words expressed as a percentage of the

maximum possible score. EE Affect Scale = Percentage of extreme endorsement for Affect

words. EDE-Q Global = Eating Disorder Examination Questionnaire Global scale. BMI = Body

mass index. RSE = Rosenberg Self-Esteem scale. PANAS Positive = Positive and Negative

Affect Schedule Positive Affect subscale.
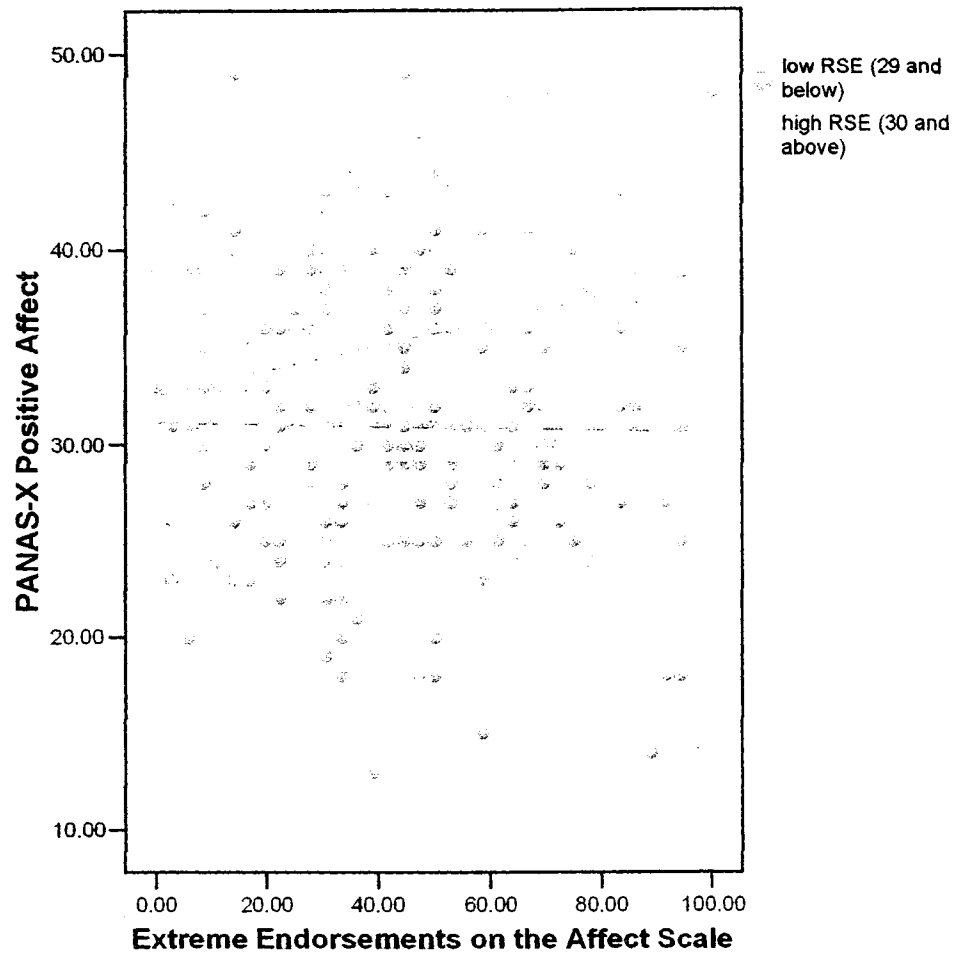
Figure 3. Percentage of extreme endorsements of Affect Scale words plotted as a

function of the PANAS-X Positive Affect scale and RSE.

Comparison of High and Low RSE Groups

Self-esteem appears to be related to the ratings of Body Scale words and to other

psychometric measures (i.e., EDE-Q, PANAS-X, BDI-II). Further investigation was required to

determine the magnitude of difference in psychometric scores and word valence ratings among

the low self-esteem group (i.e., RSE scores of midpoint = 29 or less) and the high self-esteem

group (RSE scores of 30 or greater). The low self-esteem group gave more extreme valence-

congruent ratings of the Body Scale words (refer to Table 10). These findings suggest that

individuals with low self-esteem find body words to be more affectively evocative relative to

their counterparts with higher self-esteem. The same cannot be said for affect word valence

ratings.

Table 10

Comparison of High and Low Self-Esteem Groups on Word List Valence Ratings

Derived Scale	Low Self-Esteem		High Self-Esteem			
	M	*(SD)*	*M*	*(SD)*	*t*	*p*
Thin Body	1.55	(1.00)	1.09	(0.97)	3.80	< .001*
Fat Body	-1.92	(0.97)	-1.50	(1.02)	-3.46	.001*
Body Scale	81.22	(12.23)	74.93	(11.64)	4.31	< .001*
EE Body Scale	37.06	(30.53)	24.78	(24.54)	3.61	< .001*
Positive Appearance	2.08	(0.66)	2.18	(0.64)	-1.14	.254
Positive Affect	2.22	(0.50)	2.32	(0.48)	-1.72	.086
Negative Affect	-2.07	(0.71)	-1.91	(0.69)	-1.87	.063
Affect Scale	85.83	(6.81)	86.33	(6.24)	-0.63	.532
EE Affect Scale	45.33	(24.04)	46.21	(24.74)	-0.29	.769

Note: Low self-esteem as determined by a Rosenberg Self-Esteem (RSE) scale cut-score of 29 or

less, whereas high self-esteem of 30 or greater. Body Scale = Mean of valence congruent Body

words expressed as a percentage of the maximum possible score. EE Body Scale = Percentage of

valence-congruent endorsements for Body words. Affect Scale= Mean of valence-congruent

Affect words expressed as a percentage of the maximum possible score. EE Affect Scale =

Percentage of valence-congruent endorsements for Affect words.

* Bonferroni corrected per-comparison error rate = .05/9 = p < .006.

Furthermore, when the low- and high-level self-esteem groups were compared,

significant differences emerged on the psychometric measures (refer to Table 11). The low self-

esteem group reported significantly greater body image and eating concerns (EDE-Q Global),

negative affect, and depressive symptomatology. Additionally, the low self-esteem group also

reported significantly lower positive affect. These findings suggest that self-esteem is

significantly related to affective functioning and the degree of body and eating concerns.

Table 11

Comparison of High and Low Self-Esteem Groups on Psychometric Variables

Variable	Low Self-Esteem		High Self-Esteem			
	M	*(SD)*	*M*	*(SD)*	*t*	*p*
EDE-Q Global	2.36	(1.25)	1.30	(1.10)	7.34	< .001*
PANAS Positive	31.02	(7.37)	35.51	(7.26)	-4.96	< .001*
PANAS Negative	24.84	(7.37)	18.41	(6.23)	7.63	< .001*
BDI-II	15.04	(8.37)	7.62	(5.04)	8.63	< .001*
RSE	25.01	(3.43)	34.32	(3.02)	-23.64	< .001*
BMI	23.99	(5.12)	23.19	(4.83)	1.31	.55
Age	19.08	(5.16)	20.81	(6.85)	-2.35	.02

Note: Low self-esteem as determined by a Rosenberg Self-Esteem (RSE) scale cut-score of 29 or

less, whereas high self-esteem of 30 or greater.

* Bonferroni corrected per-comparison error rate = .05/7 = $p <$ .007

Since significant differences emerged between the low and high self-esteem groups on

the EDE-Q Global scale, further analysis was conducted to determine whether these groups

differed significantly on the EDE-Q subscales that comprised the Global scale (refer to Table

12). The low self-esteem group reported significantly higher body image and eating concerns on

each of the EDE-Q subscales. This finding indicates that participants reporting lower levels of

self-esteem also report significantly greater dietary restraint and eating concerns as well as

greater shape and weight concerns compared to those participants reporting higher self-esteem

Table 12

Comparison of High and Low Self-Esteem Groups on EDE-Q Subscales

Subscale	Low Self-Esteem		High Self-Esteem			
	M	*(SD)*	M	*(SD)*	t	p
Restraint	1.83	(1.41)	1.28	(1.24)	3.40	.001*
Eating Concerns	1.48	(1.22)	0.66	(0.85)	6.37	< .001*
Shape Concerns	3.26	(1.50)	1.85	(1.42)	7.86	< .001*
Weight Concerns	2.88	(1.45)	1.46	(1.38)	8.18	< .001*

Note: Low self-esteem as determined by a Rosenberg Self-Esteem (RSE) scale cut-score of 29

or less, whereas high self-esteem of 30 or greater.

* Bonferroni corrected per-comparison error rate = .05/4 = p < .013

Section 3: Analysis of Change on the Psychometric Measures Following Participation in the

Turning Points Program

A series of paired t-tests was conducted to determine if partici   reported change from

pre- to post-intervention on the psychometric measures (_DE-Q Global sc   NAS

Positive and Negative Affect scales, RSE, and R   ii), the EDE-Q subscales (Restraint, Eating

Concerns, Shape Concerns, and Weigh(₍ᵤₙcerns), and the word valence ratings across the five

factors (i.e., Thin Body, Fat Body, Negative Mood, Positive Appearance, and Positive Mood).

The first set of paired t-tests was conducted to determine the degree of change that occurred

amongst the high school participants on the psychometric measures following the *Turning Points* intervention (refer to Table 13). Participants showed a significant decrease in EDE-Q Global scores following participation in the program. In comparison to the normative data published by Carter and colleagues (2001), the observed change indicates that the young women in this sample moved from the 55th-60th percentile in eating and body image concerns, as measured by the Global scale, to the 45th-50th percentile.

Table 13

Change on the Psychometric Measures Following the Turning Points Intervention

Measure	Pre-Intervention		Post-Intervention			
	M	*(SD)*	*M*	*(SD)*	*t*	*p*
EDE-Q Global	1.46	(1.10)	1.16	(1.11)	2.72	.009*
PANAS						
Positive Affect	34.54	(7.89)	33.33	(9.69)	1.02	.311
Negative Affect	20.12	(6.94)	20.71	(6.95)	-0.66	.51
BDI-II	10.60	(7.12)	9.41	(8.64)	1.42	.162
RSE	29.70	(4.98)	29.92	(6.20)	-0.33	.742

Note. EDE-Q Global = Eating Disorder Examination Questionnaire Global scale. PANAS = the Positive and Negative Affect Schedule. RSE = the Rosenberg Self-Esteem Scale. BDI-II = the Beck Depression Inventory-II.

* Bonferroni corrected per-comparison error rate = .05/5 = $p < .01$.

A second set of paired *t*-tests was conducted to determine the degree of change that participants reported the EDE-Q subscales (refer to Table 14). Significant change was observed on two of the four subscales. Specifically, scores on the Restraint and Shape Concerns subscales

showed significant reduction at post-intervention evaluation. With regard to published norms

(Carter et al., 2001) these changes indicate that the young women sampled for this study moved

from being at the 55th-60th percentile range to the 45th-50th percentile range on Restraint and

Shape Concerns subscales, and from the 55th-60th percentile range to the 50th-60th percentile

range on Weight concerns.

Table 14

Change on the EDE-Q Subscales Following the Turning Points Intervention

Subscale	Pre-Intervention		Post-Intervention			
	M	(SD)	M	(SD)	t	p
Restraint	1.05	(1.14)	0.71	(0.92)	2.70	.009*
Eating Concerns	0.87	(0.98)	0.75	(0.85)	1.06	.296
Shape Concerns	2.14	(1.46)	1.72	(1.61)	2.80	.007*
Weight Concerns	1.79	(1.44)	1.45	(1.48)	2.00	.050

* Bonferroni corrected per-comparison error rate $= .05/4 = p < .013$.

A third set of paired t-tests was conducted on the Word List scales derived from the

initial factor analysis (refer to Table 15). Following their participation in the *Turning Points*

program, participants ascribed significantly less positive valence to the Thin Body words.

Table 15

Change on the Word List Valence Ratings Following the Turning Points Intervention

| Dependent Variable | Pre-Intervention | | Post-Intervention | | | |
	M	*(SD)*	*M*	*(SD)*	*t*	*p*
Thin Body words	1.46	(0.98)	1.09	(1.12)	2.72	.009*
Fat Body words	-1.68	(1.07)	-1.70	(1.06)	0.19	.852
Positive Appearance words	1.99	(0.74)	1.88	(0.86)	0.98	.332
Positive Affect words	2.37	(0.50)	2.16	(0.72)	2.16	.036
Negative Affect words	-1.86	(0.80)	-1.72	(1.05)	-1.41	.165

* Bonferroni corrected per-comparison error rate = .05/5 = $p < .01$.

Section 4: Satisfaction Ratings

Satisfaction ratings concerning the *Turning Points* program were collected from participants along with the post-intervention questionnaires. The high school students reported their satisfaction on a four-point Likert scale in three domains: overall satisfaction with the program, the likelihood that they would recommend the program to their peers, and th ir feeling that they benefited from the program (refer to Appendix J). P   in   ing the data the e were reverse scored so that higher scores reflect greater sa┐   ⌐uon (i.e., to 1   ⌐   ˙gly Disagree, 2 = Disagre   Agree, and 4 = Stror̩ʒ̗y Agree). Item 1, overall satis   ˙ion with the program had a mean of 2.88. ir┆˛atıns̩ that participants generally "*Agree*" that they were satisfied. Itc   ., the likelihood of recommending the program, had a mean of 2.98 indicating that participants generally "*Agree*" that they would recommend the program to others. Lastly, item 3, had a mean of 2.85, indicating that participants said they "*Agree*" that they benefited from the program. A Pearson product-moment correlational analysis was conducted to determine

the relationship between the three satisfaction measures. The three measures were highly

correlated with correlations ranging from $r = .73$ to .76. Since the three measures were highly

correlated, scores were combined to create one summary measure of satisfaction with a

theoretical range of 3 to 12. The sample ($n = 53$) had an overall mean satisfaction rating of $M =$

8.72 ($SD = 2.24$) indicating an overall feeling of satisfaction with the *Turning Points* program.

Pearson product-moment correlations were conducted to examine the relationship

between scores on the psychometric measures and the participants' level of satisfaction upon

completion of the program. This analysis did not yield any significant correlation with either the

pre-intervention data or the post-intervention data, nor for the difference scores between

occasions of measurement.

Discussion

The first aim of this study was to examine the relationship between depression, body

dissatisfaction, and valence ratings of body and affect-related words. The initial factor analysis

that was conducted in this study yielded five scales: Thin Body, Fat Body, Positive Appearance,

Positive Affect, and Negative Affect. These scales were rated for valence and were examined in

terms of extreme endorsement (i.e., ratings of *"very positive"* or *"very negative"*). Each scale

appears to have a have unique and significant affective valence. These qualities indicate that

these factors have meaning to individuals who process them and evoke an affective response.

Each of the scales has either a positive emotional tone (i.e., Thin B   rds, Positive

Appearance words, and Positive Mood words) or a negat   emotional tone (i.e. Fat Body w

and Negative Mood words).

The five factors can be combined to create two higher-order scales: The Body and Affect

Scales. The Body Scale, which is comprised of the Thin and Fat Body word factors, is distinctive

and evokes an affective response for individuals with active body schema. Similarly, the Affect Scale, which is comprised of the Positive Appearance, Positive Affect, and Negative Affect factors, also demonstrates the ability to evoke a distinctive emotional response.

Once the two higher-order scales were isolated, a hierarchical regression analysis examined the relationship between each of the five psychometric measures (i.e., EDE-Q Global, PANAS Positive Affect Scale, PANAS Negative Affect Scale, BDI-II, and RSE) and valence ratings. As expected, scores on the EDE-Q were significantly correlated with valence- congruent ratings of the words that comprise the Body Scale. Furthermore, BMI also contributed to the valence ratings of Body Scale words. This finding indicates that there is a connection between the degree of eating and body image concerns, the individual's current body weight and shape, and the emotional tone that an individual ascribes to stimulus words on this scale. This relationship also supports models of cognitive specificity among those with eating and body image concerns insofar as the valence ratings of these stimulus words are predictive of the degree of body dissatisfaction.

Scores on the PANAS Positive Affect Scale were significantly related to valence-congruent ratings of words on the Affect Scale. This finding indicates that an increase in the level of positive affect is associated with the tendency to rate the items that comprise the Affect Scale as increasingly valence congruent (i.e., Positive Appearance and Positive Affect are rated more positively, Negative Affect words are rated more negatively). As well, valence ratings of these stimulus words are predictive of the degree of affective functioning.

In addition to the contributions of each of the psychometric variables, this study examined the potential of self-esteem and BMI as a moderating factors in word valence ratings across the Body and Affect Scales. While BMI did make a significant independent contribution

to the prediction of Body Scale scores, BMI did not demonstrate moderating effects for either the

Body Scale or the Affect Scale words. In contrast, self-esteem did act as a moderating variable

for valence-congruent ratings of Body Scale words. Although EDE-Q Global scale scores and

Body Scale words are positively related for both high and low self-esteem individuals, this

relationship is significantly stronger among those who are low in self-esteem. As eating and

body image concerns increase among those with low self-esteem, body words evoke

significantly stronger ratings. In comparison to those with higher self-esteem, individuals low in

self-esteem express more positive reactions to Thin Body words, and more negative reactions to

Fat Body words.

This finding may be viewed in terms of an approach/avoidance framework of sch___c

processing. Those who hold a generally more negative set of core b___fs with regard to self-

worth and self-evaluation (i.e., low self-esteem) adopt an approach perspective concerning Body

related stimuli. Due to their overarching negative self-evaluation, these individuals may find

Thin and Fat Body words more salient in the presence of eating and body image concerns. The

activation of the Thin and Fat Body schemas may be related to an increasingly positive

evaluation of Thin Body words that describe a desired goal state, and to an increasingly negative

evaluation of material that is perceived as threatening (i.e., Fat Body words). In addition to

differential valence ratings, those who are lower in self-esteem also reported significantly higher

levels of eating and body image concerns on the EDE-Q Global, as well as on each of the EDE-

Q subscales. It appears that lower self-esteem is significantly related to the presence of eating

disorder-related symptomatology among young women. The general negative pattern of self-

evaluation found in those with low self-esteem also operates with regard to body and weight-

specific self-evaluation evaluations.

Self-esteem did not act as a moderating variable for the valence-congruent ratings of Affect Scale words. This finding may be related to the measure used to evaluate self-esteem. The Rosenberg Self-Esteem Scale is an instrument that measures trait self-esteem. Ratings of affect words may be more closely related to transient state self-esteem, or short-term measures of affect. This relationship to recent events or current affective state is modestly supported by the significant relationship between scores on the PANAS Positive Affect Scale and valence congruent word ratings on the derived Affect Scale. The PANAS requires respondents to report how they have felt "in the past few weeks", rather that assessing a more longstanding trait. Further investigation is required to determine whether state self-esteem might act as a moderating factor for the valence ratings of affect words.

In addition to examining the relationship between self-esteem, BMI and valence ratings, this study looked at the relationship between the psychometric measures and the frequency of extreme endorsements. This analysis examined the frequency of extreme ratings (i.e., *"very negative"* or *"very positive"*) across the Body and Affect Scales. Scores on the EDE-Q Global scale were significantly related to extreme endorsement of Body Scale words. As eating and body image concerns increase, individuals engage in increasingly rigid (i.e., extreme) evaluations of body-schema specific stimuli. Additionally, scores on the PANAS Negative Affect Scale were also significantly related to the frequency of extreme endorsement of Body Scale words. These findings are congruent with findings from previous studies that indicate that depressed individuals engage in restrictive extreme thinking (Beevers et al., 2003; Bone et al., 2005; Teasedale et al., 2001). Lastly, BMI positively correlated with the percent of extreme endorsements of Body Scale words. This further supports the notion that an individual's actual body weight plays a role in the rigid affective reaction they report concerning body related

material. Together, these relationships indicate that individuals who report greater eating and body image concerns, increased negative affect, and higher BMI experience more extreme, black-and-white affective reactions when faced with stimuli describing both thin and fat physiques. Such relationships did not hold true with regard to the words on the Affect Scale.

Similar to the valence-congruent word ratings, the relationship between extreme endorsement and eating and body image concerns was moderated by self-esteem. Eating and body image concerns were more strongly correlated with the frequency of extreme attitudes toward body-related material for those who are low in self-esteem. Body-related stimuli were more likely to evoke more highly polarized evaluations (i.e., "very negative" or "very positive") among individuals low in self-esteem compared to their peers who report higher levels of self-esteem.

Furthermore, self-esteem also acts as a moderating factor for the extreme endorsement of Affect Scale words. Scores on the PANAS Positive Affect subscale were more strongly correlated for those who are high in self-esteem. This finding indicates that the frequency of extreme endorsements of Affect Scale words varies in relation to state affect for those who hold more positive overarching self-perceptions (i.e., higher self-esteem). As positive state affec ·

increases (i.e., higher scores on the PANAS Positive Affect Scale), t!   · who are hi; ·r ι ·lf-esteem provide more polarized evaluations of Affect ᶜ   _ᵤ.ms. In contrast, those wit!   ·r

self-esteem did not demonstrate the same relatio· ᴊnip between positive state affect and extreme endorsements. This may be a function of a more stable dysphoric state affect in individuals who report lower self-esteem. Perhaps individuals with low self-esteem experience a more stable pattern of negative trait affect and depressive symptomatology in the presence of low self-esteem. This may be related to fewer fluctuations in positive state affect compared to their

counterpart with higher self-esteem. For example, an individual with high self-esteem may be more likely to experience positive state affect in response to positive daily events. In contrast, if those low in self-esteem adopt a more global and stable outlook that characterizes depression, their mood may not be as susceptible to the influences of positive daily influences.

The second aim of this study was to examine these variables for possible change reported by participants following participation in the *Turning Points* program. At post-intervention assessment, the high school participants reported significantly fewer eating and body image concerns. Specifically, participants showed significant improvement on measures of Restraint and on measures of Shape Concerns. These changes in dietary restraint and concerns about body shape are similar to those obtained in previous research concerning eating disorder prevention programs for adolescent females (Stewart, Carter, Drinkwater, Hainsworth, & Fariburn, 1999). Furthermore, participants also showed significant change with regard to the affective valence-congruent evaluations they ascribed to Thin Body words. This change may be attributable to reductions in the internalization of the thin-ideal or a reductions in the drive for thinness that has been found in previous psychoeducation-based prevention studies (Stice, Orjada, & Tristan, 2006). However, due to the lack of randomized assignment and a control condition, it is not possible to assert that any improvements reflected in the EDE-Q were directly caused by participation in the *Turning Points* program. Lastly, it is of note that, unlike some previous prevention programs with non-clinical populations, the *Turning Points* curriculum was not related to any increase in eating disordered cognitions or behaviors (Carter, Stewart, Dunn, & Fairburn, 1996).

In addition to reporting significant improvements in eating and body image pathology, and in reduced schematic activation (as measured by reduced Thin Body word valence ratings),

the high school participants reported that they were generally satisfied with their experience in the *Turning Points* program. Specifically, participants generally agreed that they were satisfied with the overall program, that they would recommend the program to others, and that they feel that their participation in the program was beneficial. Although the participants' level of satisfaction did not appear to be related to their score on the psychometric measures, nor to any degree of change that they may have experienced, it is useful to know that the *Turning Points* program was a positive experience for the participating high school students. This finding is beneficial in terms of implementing future programs and may indicate a high probability that participants will be less likely to prematurely terminate or drop-out of the program.

Strengths and Limitations

The present study makes some contributions toward the understanding of the emotional salience of body and affect related material for young women, and of the relationship between mental health symptomatology and disorder-specific schemas. Secondly, this study acts as an evaluation for the *Turning Points* program. Although the testing of this psychoeducational program is still in the pilot phase, it appears to be a viable option in terms of effectiveness and economic value for prevention and treatment of eating and body image disturbances in young women.

Additionally, the present study demonstrates several methodological strengths. Firstly, the psychometric measures in this study demonstrate high levels of internal reliability and, for the most part, have been used with comparable populations in past research. Secondly, this study employed a reasonably large sample size with a reasonably high return rate for both the high school and university samples. The completion rate among the high school participants was high, with approximately 90% of the participants providing complete data (i.e., complete Time 1 and

Time 2 questionnaire packages). Furthermore, the return rate among the university participants was approximately 70%.

The limitations of the present study include the lack of ability to make causal inferences, the limits of generalizability, and the reliance on self-report measures. Firstly, the present study did not employ random assignment or a control group in evaluating the *Turning Points* program. Therefore, it is not possible to assert that any significant changes on the psychometric measures or in Word List valence ratings is directly attributable to the program itself. Observed change may have been attributable to an expectancy effect, the passage of time, retest effects, or regression toward the mean. Secondly, the findings of this study are limited in generalizability due to the homogeneity of the sample. The sample was overwhelming Caucasian and were recruited from one university and one high school in North-western Ontario. It is unclear whether the results of this study would generalize to more ethnically diverse populations, or to young women in different geographical locations. Furthermore, the sample scored predominantly within in the normal range on the psychometric measures. Therefore, it is unclear if the findings of this research may be generalized to clinical populations (i.e., those who meet clinical criteria for eating disorders and/or depression).

Lastly, this study relied solely on self-report measures of eating concerns and body image, depression, affect, self-esteem, and body mass index. Although the measures employed have been validated and demonstrate robust reliability, past research demonstrates that self-report measures such as the EDE-Q may underestimate the frequency of eating disorder-related behaviors and cognitions (e.g., frequency of binge episodes, the use of laxatives and diuretics, and concerns for weight and shape) (Carter, Aime, & Mills, 2000). Furthermore, past research has indicated that exposure to schema congruent material results in priming and schema

activation. In retrospect, the content of the five factors may have resulted in schema activation that affected the word valence ratings across all factors. For example, asking participants to process and evaluate Negative Mood words may increase the negative valence that participants attach to all types of stimulus words. To reduce this schematic activation, future research could employ control words that are neutral in meaning and valence to avoid any undue influence of priming.

Subsequent studies to evaluate the efficacy of the *Turning Points* program should include neutral valenced body and affect stimuli to reduce the effects of priming that may occur with the use of strongly valenced material. Additionally, future research should employ a control condition to allow for causal inferences to be made regarding post-treatment changes, and should also include a longer-term follow-up assessment to determine if gains are maintained over the course of time. Lastly, future research may consider using clinical interviews to assess for the presence of eating disorder and depressive symptomatology, and objective measurements of height and weight to obtain a reliable measure of BMI.

Future Directions

Based on the findings from this study, several new areas of research become apparent. Firstly, it would be beneficial to examine whether past levels of self-esteem influence current affective reactions. Do individuals who were formerly high or low in self-esteem continue to show an increased frequency of extreme ratings for Thin and Fat Body words? Thi research would examine whether changing an individual's self-concept (i.e. increasing self-esteem) results in changing their affective reactions toward salie material. Secondly, future research could examine whether the lack of the approach/a oid cognitive framework that was observed in those who are low in self-esteem occurs in those who are diagnosed with eating disorders. This

research could address whether these individuals demonstrate cognitive patterns consistent with

their actual BMI or whether negative overall self perception is related to their inaccurate

perceptions of being overweight (i.e., high in BMI). Lastly, future studies could examine the

relationships between body dissatisfaction and schematic processing that were observed in the

present study to see if they are applicable to males. Additionally, does past and present self-

esteem act as a moderating factor for males in the same manner that it does for females?

References

Ainsworth, C., Waller, G., & Kennedy, F. (2002). Threat processing in women with bulimia. *Clinical Psychology Review, 22*, 1155-1178.

Beck, A. T., Steer, R. H., & Brown, G. (1996). *BDI-II Manual*. San Antonio: The Psychological Corporation.

Beck, A. T., Rush, A. J., Shaw, B. F., & Emery G. (1979). *Cognitive therapy of depression*. New York: Guilford Press.

Beck, A. T. (1976). *Cognitive therapy and the emotional disorders*. New York: International University Press.

Beck, R., Benedict, B., & Winkler, A. (2003). Depression and anxiety: Integrating the tripartite and cognitive content-specificity assessment models. *Journal of Psychopathology and Behavioral Assessment, 25(4)*, 251-256.

Beck, R., & Perkins, T. S. (2001). Cognitive content-specificity for anxiety and depression: A meta-analysis. *Cognitive Therapy and Research, 25(6)*, 651-663.

Beevers, C. G., Keitner, G. I., Ryan, C. E., & Miller, I. W. (2003). Cognitive predictors of symptom return following depression treatment. *Journal of Abnormal Psychology, 112* (3), 488-496.

Bekker, M. H. J., Croon, M. A., & Vermaas, S. (2002). Inner body and outward appearance- the relationship between orientation toward outward appearance, body awareness and symptom perception. *Personality and Individual Differences, 33*, 213-225.

Ben-Tovim, D. I., Walker, M. K., Fok, D., & Yap, E. (1989). An adaptation of the Stroop test for measuring shape and food concerns in eating disorders: A quantitative measure of psychopathology. *International Journal of Eating Disorders, 8(6)*, 681-687.

Blankstein, K. R., & Segal, Z. V. (2001). Cognitive assessment: Issues and methods. In K. S.

　　　Dobson (Eds.), *Handbook of cognitive-behavioural therapies* (2nd ed.) (pp. 40-85). New

　　　York: The Guilford Press.

Bone, M., Davis, R. & McMahan, A. (June, 2005). Valence Ratings of Body and Emotion

　　　Related Stimulus Words in Depression and Body Dissatisfaction. Poster presented at the

　　　Canadian Psychological Association annual convention, Montreal, QUE.

Brittlebank, A. D., Scott, J., Williams, J.M., & Ferrier, I. N. (1993) Autobiographical memory in

　　　depression: State or trait marker? *British Journal of Psychiatry, 162,* 118-121.

Bulik, C. M., Sullivan, P. F., & Kendler, K. S. (2002). Medical and psychiatric morbidity in

　　　obese women with and without binge eating. *International Journal of Eating Disorders,*

　　　32, 72-78.

Carter, J. C., Stewart, D. A., & Fairburn, C. G. (2001). Eating disorder examination

　　　questionnaire: Norms for young adolescent girls. *Behaviour Research and Therapy, 39,*

　　　625-632.

Carter, J. C., Aime, A. A., & Mills, J. S. (2000). Assessment of bulimia nervosa: A comparison

　　　of interview and self-report questionnaire methods. *International Journal of Eating*

　　　Disorders, 30, 187-192.

Carter, J. C., Stewart, D. A., Dunn, V. J., & Fairburn, C. G. (1996). Primary prevention of eating

　　　disorders: Might it do more harm than good? *International Journal of Eating Disorders,*

　　　22, 167-172.

Cassin, S. E., & von Ranson, K. M. (2005). Word List for testing cognitive biases in eating

　　　disorders. *European Eating Disorders Review, 13,* 216-220.

Cho, Y., & Telch, M. J. (2005). Testing the cognitive content-specificity hypothesis of social

anxiety and depression: An application of structural equation modeling. *Cognitive Therapy and research, 29(4),* 399-416.

Clark, D. A., & Beck, A. T. (1989). Cognitive theory and therapy of anxiety and depression. In P. C. Kendall & D. Watson (Eds.), *Anxiety and depression: Distinctive and overlapping features* (pp. 379-411). San Diego: Academic Press.

Cooper, M., & Hunt, J. (1998). Core beliefs and underlying assumptions in bulimia nervosa and depression. *Behaviour Research and Therapy, 36,* 895-898.

Danion, J., Kauffmann-Muller, F., Grange, D., Zimmermann, M., & Greth, P. (1995). Affective valence of words, explicit and implicit memory in clinical depression. *Journal of Affective Disorders, 34,* 227-234.

Davis, R., McVey, G., Heinmaa, M., Stephens, D., Mercier, M., Degagne-White, K., Esposti, J. Bourret, K., Strudle, K., Heimonen, T., Lucier, M. K., & Crowther-Rakochy, W. (2004). *Turning points for teens: Ontario community-based treatment for adolescent eating disorders.* Funded by the Ontario Ministry of Health and Long-Term Care, 2004-2006.

Dobson, K. S., & Dozois, D. J. A. (2004). Attentional biases in eating disorders: A meta-analytic review of Stroop performance. *Clinical Psychology Review, 23,* 1001-1022.

Dozois, D. J. A., & Dobson, K. S. (2003). The structure of the self-schema in clinical depression: Differences related to episode recurrence. *Cognition and Emotion, 17(6),* 933-941.

Fairburn, C. G., & Beglin, S. J. (1994). Assessment of eating disorders: Interview or self-report? *International Journal of Eating Disorders, 16,* 363-370.

Fassino, S., Piero, A., Daga, G. A., Leombruni, P., Mortara, P., & Rovera, G. G. (2002). Attentional biases and frontal functioning in anorexia nervosa. *International Journal of Eating Disorders, 31,* 274-283.

Faunce, G. J. (2002). Eating Disorders and Attentional Bias: A review. *Eating Disorders, 10,*

125-139.

Formea, G. M., & Burns, G. L. (1996). Selective processing of food, weight, and body-shape

words in nonpatient women with bulimia nervosa: Interference on the Stroop task.

Journal of Psychopathology and Behavioural Assessment, 18(2), 105-118.

Fortune, D. G., Richards, H. L., Corrin, A., Taylor, R. J., Griffiths, C. E. M., & Main C. J.

(2003). Attentional Bias for psoriasis-specific and psychosocial threat in patients with

psoriasis. *Journal of Behavioural Medicine, 26*(3), 211-224.

Geller, J., Johnston, C., Madsen, K., Goldner, E. M., Remick, R. A., & Birmingham, C. L.

(1998). Shape and weight-based self-esteem and the eating disorders. *International*

Journal of Eating Disorders, 24, 285-298.

Green M. W., & Rogers, P. J. (1993). Selective Attention to food and body shape words in

dieters and restrained nondieters. *International Journal of Eating Disorders, 14*(4), -

517.

Heatherton, T. F., & Polivy, J. (1991). Development and validation of a scale for measuring state

self-esteem. *Journal of Personality and Social Psychology, 60,* 895-910.

Hughes, M. L., Hamill, M., van Gerko, K., Lockwood, R., & Waller, G. (2006). The relationship

between different levels of cognition and behavioral symptoms in eating disorders.

Eating Behaviors, 7, 125-133.

Ivarsson, T., Svalander, P., Litlere, O., & Nevonen, L. (2006). Weight concerns, body image,

depression and anxiety in Swedish adolescents. *Eating Behaviors, 7,* 161-175.

Jansen, A., Huygens, K., & Tenney, N. (1998). No evidence for selective processing of

subliminally presented body words in restrained eaters. *International Journal of Eating*

Disorders, 24, 435-438.

John, C. H. (1988). Emotionality ratings and free-association norms of 240 emotional and non-emotional words. *Cognition and Emotion, 2*(1), 49-70.

Jones, A. M. & Buckingham, J. T. (2005). Self-esteem as a moderator of the effect of social comparison on women's body image. *Journal of Social and Clinical Psychology, 24(8)*, 1164-1187.

Labarge, A. S., Cash, T. F., & Brown, T. A. (1998). Use of a modified Stroop task to examine appearance-schematic information processing in college women. *Cognitive Therapy and Research, 22*(2), 179-190.

Leung, P. W. L. , & Poon, M. W. L. (2001). Dysfunctional schemas and cognitive distortions in psychopathology: A test of the specificity hypothesis. *Journal of Child Psychology and Psychiatry, 42(6)*, 755-765.

McFarlane, T., McCabe, R. E., Jarry, J., Olmstead, M. P., & Polivy. J. (2001). Weight-related and shape related self-evaluation in eating-disordered and non-eating-disordered women. *International Journal of Eating Disorders, 29*, 328-335.

McFarlane, T. Ploivy, J., & McCabe, R. E. (1999). Help, not harm: Psychological foundation for a nondieting approach toward health. *Journal of Social Issues, 55(2)*, 261-276.

Mills, J. S., Polivy, J., Herman, C. P., & Tiggemann, M. (2002). Effects of exposure ot thin media images: Evidence of self-enhancement among restrained eaters. *Personality and Social Psychology Bulletin, 28(2)*, 1687-1699.

Mond, J. M., Hay, P. J., Owen, C., & Beumont, P. J. V. (2004). Validity of the Eating Disorder Examination Questionnaire (EDE-Q) in screening for eating disorders in community samples. *Behaviour Research and Therapy, 42*, 551-567.

Pagoto, S. L., Spring, B., Cook, J. W. McChargue, D. & Schneider, K. (2006). High BMI and

reduced engagement and enjoyment in pleasant events. *Personality and individual*

Differences, 40, 1421-1431.

Perpina, C., Hemsley, D., Treasure, J., & de Silva, P. (1993). Is selective information processing

of food and body words specific to patients with eating disorders? *International Journal*

of Eating Disorders, 14(3), 359-366.

Phillips, L., Tiggemann, M., & Wade, T. (1997). Comparison of cognitive style in bulimia

nervosa and depression. *Behaviour Research and Therapy, 35*(10), 939-948.

Powell, M. R., & Hendricks, B. (1999). Body schema, gender, and other correlates in nonclinical

populations. Genetic, Social, and General Psychology Monographs, 125(4), 333-412.

Rector, N. A., Segal, Z. V., & Gemar, M. (1998). Schema research in depression: A Canadian

perspective. *Canadian Journal of Behavioural Science, 30*(4), 213-224.

Reiger, E., Schotte, D. E., Touyz, S. W., Beumont, P. J. V., Griffiths, R., & Russell J. (1998).

Attentional biases in eating disorders: A visual probe detection procedure. *International*

Journal of Eating Disorders, 23, 199-205.

Rosenberg, M. (1989). *Society and the Adolescent Self-Image. Revised edition.* Middletown, CT:

Wesleyan University Press.

Sackville, T., Schotte, D. E., Touyz, S. W., Griffiths, R., & Beumont P. J. V. (1998). Conscious

and preconscious processing of food, body wei⋯⋯ ⋯⋯e, and emotio⋯ ⋯ted words

in women with anorexia nervosa. *Inte⋯ ⋯onal Journal of Eating ⋯ ⋯ders, 23,* 77-82.

Schifano, F., & Curran, H. V. (1994). Pharmacological models of memory dysfunction? A

comparison of the effects of scopolamine and lorazepam on word valence ratings,

priming and recall. *Psychopharmacology, 115,* 430-434.

Schniering, C. A., & Rapee, R. M. (2004). The relationship between automatic thoughts and

   negative emotions in children and adolescents: A test of the cognitive content-specificity

   hypothesis. *Journal of Abnormal Psychology, 113(3)*, 464-470.

Schniering, C. A., & Rapee, R. M. (2002). Development and validation of a measure of

   children's automatic thoughts: The Children's Automatic Thoughts Scale. *Behaviour

   Research & Therapy, 40*, 1091-1109.

Stewart, D. A., Carter, J. C., Drinkwater, J., Hainsworth, J. & Fairburn, C. (1999). Modification

   of eating attitudes and behaviour in adolescent girls: A controlled study. *International

   Journal of Eating Disorders, 29*, 107-118.

Stice, E., Orjada, K., & Tristan, J. (2006). Trial of a psychoeducational eating disturbance

   intervention for college women: A replication and extension. *International Journal of

   Eating Disorders, 39*, 233-239.

Stice, E., & Bearman S. K. (2001). Body-image and eating disturbances prospectively predict

   increases in depressive symptoms in adolescent girls: A growth curve analysis.

   Developmental Psychology, 37(5), 597-607.

Tabachnick, B. G., & Fidell, L. S. (2001). *Using multivariate statistics, 4th edition.* Boston: Allyn

   and Bacon.

Taghavi, M. R., Dalgleish, T., Moradi, A. R., Neshat-Doost, H. T., & Yule, W. (2003). Selective

   processing of negative emotional information in children and adolescents with General

   Anxiety Disorder. British Journal of Clinical Psychology, 4^ -230.

Teasdale, J. D., Scott, J., Moore, R. G., Hayhurst, H., Pope, M., & Paykel, E. S. (2001). How

   does cognitive therapy prevent relapse in residual depression? Evidence from a controlled

   trial. *Journal of Consulting and Clinical Psychology, 69*(3), 347-357.

Thompson, J. K., Heinberg, L. J., Altabe, M., & Tantleff-Dunn, S. (1999). *Exacting beauty:*

Theory, assessment, and treatment of body image disturbance. Washington, DC:

American Psychological Association.

Troop, N. A., & Bifulco, A. (2002). Childhood social arena and cognitive sets in eating

disorders. *British Journal of Clinical Psychology, 41,* 205-211.

Waller, G., Dickson, C., & Ohanian, V. (2002). Cognitive content in bulimic disorders: Core

beliefs and eating attitudes. *Eating Behaviours, 3,* 171-178.

Watkins, P. C., Matthews, A., Williamson, D. A., & Fuller, R. D. (1992). Mood congruent

memory in depression: Emotional priming or elaboration? *Journal of Abnormal*

Psychology, 101, 581-586.

Watson, D., & Clark, L. A. (1994). *The PANAS: Manual for the Positive and Negative Affect*

Schedule, University of Iowa.

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of the brief

measures of positive and negative affect: The PANAS scales. *Journal of Personality and*

Social Psychology, 54, 1063-1070.

Wenzlaff, R. M., Rude, S. S., Taylor, C. J., Stultz, C. H., & Sweatt, R. A. (2001). Beneath the

veil of thought suppression: Attentional bias and depression risk. *Cognition and Emotion,*

15(4), 435-452.

Wetzel, R. D. (1976). Semantic differential ratings of concepts and suicide intent. *Journal of*

Clinical Psychology, 32(1), 4-13.

Williams, J. M. G (n.d.). *Autobiographical Memory Test.* Unpublished manuscript, University of

Oxford.

Williamson, D.A. (1996). Body image disturbance in eating disorders: A form of cognitive bias?

Eating Disorders, 4(1), 47-58.

Yovel, I., & Mineka, S. (2004). Hierarchical models of emotional disorders and emotion-

congruent cognitive biases. *Personality and Individual Differences, 36,* 679-694.

Appendix A

High School Consent Forms

The Healthy Choices Project

The Ontario Ministry of Health and Long-Term Care has provided our project team with funds to develop a video program that is intended to encourage healthy lifestyle choices among young women. We have just completed the video and now we want to determine the degree to which it might be of help. The program is intended for young women who currently have some personal concerns about their own eating attitudes, behaviors, and/or body image.

If you decide to participate, then you would be invited to attend a series of 12 weekly 1-hour group sessions involving other young women like yourself. The group will be facilitated by professional counselors from your own community. In the groups you would see a video, engage in group activities and discussion about healthy lifestyle choices regarding eating behaviors and attitudes, nutrition, body image, physical activity, mood regulation, and interpersonal relationships with peers and parents.

You would complete a number of questionnaires before the group begins, immediate after the sessions have finished, and again 3 months later. The questionnaires are designed to help us determine whether the group experience has been of benefit to those who participate. Those questionnaires will cover a variety of issues like eating attitudes and behaviors, mood and esteem, and quality of relationships.

Participation in this project is completely voluntary. Individuals who initially volunteer can subsequently withdraw at any time without penalty.

If you wish to take part in this project, please read and sign the attached consent form. If you are under the age of 18, you must also have your parent or legal guardian sign the attached con: nt form in order for you to participate in this project.

Please bring the appropriately signed consent form to first group meeting to take place in room_____ at_____ on
_____ at_____.

The Healthy Choices Project: Consent Form for Participants

My signature below indicates that I have read the attached information sheet and that I have had the opportunity to receive satisfactory answers from project personnel as to any questions that I might have about participation in this project.

Signing this form indicates that I understand and agree to the following:

1. I am a volunteer and can withdraw at any time from the project without penalty of any kind.

2. There are no expected risks associated with participation in this project.

3. The information I provide by way of my responses to questionnaires will remain confidential, and will be securely stored in the Department of Psychology at Lakehead University for 7 years.

4. I may receive a summary of the project, upon request following its completion.

5. If I am under the age of 18 at time of participation in the project I am required to present to project personnel a separate form signed by my parent or guardian giving their permission for me to participate. That consent is in addition the consent that I am giving on this form.

_____   _____
Name of Participant (please print)   Date of Birth

_____   _____
Signature of Participant   Date

_____   _____
E-mail Address   Telephone number

Parent/Guardian Information Letter and Consent Form

The Healthy Choices Project The Ontario Ministry of Health and Long-Term Care has provided our project team with funds to develop a video program that is intended to encourage healthy lifestyle choices among young women. We have just completed the video and now we want to determine the degree to which it might be of help. The program is intended for young women who currently have some personal concerns about their own eating attitudes, behaviors, and/or body image.

If you decide that you will give permission for your daughter to participate, then she would be invited to attend a series of 12 weekly 1-hour group sessions involving other young women like herself. The group will be facilitated by professional counselors from your own community. In the groups your daughter would see a video, engage in group activities and discussion about healthy lifestyle choices regarding eating behaviors and attitudes, nutrition, body image, physical activity, mood regulation, and interpersonal relationships ~~;+⊦ peers and parents.

Your daughter would complete a number of questionnaires before the group begins, immediate after the sessions have finished, and again 3 months later. The questionnaires are designed to help us determine whether the group experience has been of benefit to those who participate. Those questionnaires will cover a variety of issues like eating attitudes and behaviors, mood and esteem, and quality of relationships.

Participation in this project is completely voluntary. Individuals who initially volunteer can subsequently withdraw at any time without penalty.

If you wish your daughter to take part in this project, please read and sign the attached consent form. Your daughter must also give her own signed consent to voluntarily participate on a separate form from the one that you sign. Your daughter will bring both signed forms to the first group meeting.

The Healthy Choices Project: Consent Form for Parent/Guardian

My signature below indicates that I have read the attached information sheet and that I have had the opportunity to discuss this with my daughter.

Signing this form indicates that I understand and agree to the following:

1. My daughter is a volunteer and can withdraw at any time from the project without penalty of any kind.

2. There are no expected risks associated with your daughter's participation in this project.

3. The information that my daughter provides by way of her responses to questionnaires will remain confidential, and will be securely stored in the Department of ⁿ⁻⁻⁻ˡᵭˡogy at Lakehead University for 7 years.

4. I may receive a summary of the project, upon request, following its completion.

5. My daughter is required to present to project personnel a separate consent form signed by her signifying her own consent to participate. That consent is in addition to the consent that I am giving on this form.

_____   _____
Daughter's name (please print)   Parent/Guardian name (please print)

_____   _____
Signature of Parent/Guardian   Date

Appendix B

University Consent Forms

Participant Information Letter

Dear Participant,

Thank you for your interest in this research study. I am a PhD student in clinical psychology at LU, supervised by Dr. Ron Davis, Registered Psychologist. The purpose of this study is to see how relationships influence eating attitudes and behaviours. In the pages that follow, you will find a series of questionnaires asking about how you feel about yourself, your emotions, your eating attitudes and behaviours, and your relationship with others, including parental figures. It will take approximately 45 minutes to 1 hour to complete all the questionnaires. Please answer all questions as honestly as you can.

Your participation in this study is completely voluntary. You may withdraw at any time without penalty. You will also be free to omit any questions that you do not feel comfortable answering. All information you provide will be kept anonymous. Your name will appear only on the consent form and not on any of the pages of the questionnaire itself. Your consent form will be stored separately from the questionnaires. The information you provide will be coded, analysed, and securely stored at Lakehead University for seven years. No individual will be identified in any report of the results. The results will be shared with the Psychology department at Lakehead University and an article will be prepared for publication in an academic journal.

If you wish to take part in this project, please read and sign the attached consent form. If you are under the age of 18, you must also have your parent or legal guardian sign the attached consent form in order for you to participate in this project.

Sincerely,

Lezlie Gomes, M.A.
Ph.D Candidate

Consent Form for Participants

My signature below indicates that I have read the attached information sheet and that I have had the opportunity to receive satisfactory answers from the primary researcher, Lezlie Gomes, as to any questions that I might have about participation in this project.

Signing this form indicates that I understand and agree to the following:

6. I am a volunteer and can withdraw at any time from the project without penalty of any kind.

7. There are no expected risks associated with participation in this project.

8. The information I provide by way of my responses to questionnaires will remain confidential, and will be securely stored in the Department of Psychology at Lakehead University for 7 years.

9. I   receive a summary of the project, upon request, following its completion.

10. If I am under the age of 18 at time of participation in the project, I am required to present to project personnel a separate form signed by my parent or legal guardian giving their permission for me to participate. That consent is in addition to the consent that I am giving on this form.

Name of Participant (please print)   Date of Birth

Signature of Participant   Date

E-mail Address   Telephone number

Appendix C

Eating Disorder Examination Questionnaire

EDE-Q

The following questions are concerned with the **PAST FOUR WEEKS ONLY** (28 DAYS). Please read each question carefully and circle the number on the right. Please answer **ALL** the questions.

EXAMPLES: ON HOW MANY DAYS OUT OF THE PAST 28 DAYS.......	No days	1-5 days	6-12 days	13-15 days	16-22 days	23-27 days	Every day
...Have you tried to eat vegetables?	0	1	2	(3)	4	5	6
...How many times have you walked to school?	0	1	(2)	3	4	5	6

ON HOW MANY DAYS OUT OF THE PAST 28 DAYS.....	No days	1-5 days	6-12 days	13-15 days	16-22 days	23-27 days	Every day
1. ...Have you been deliberately trying to limit the amount of food you eat to influence your shape or weight?	0	1	2	3	4	5	6
2. ...Have you gone for long periods of time (8 hours or more) without eating anything in order to influence your shape or weight?	0	1	2	3	4	5	6
3. ...Have you tried to avoid eating any foods which you like in order to influence your shape or weight?	0	1	2	3	4	5	6
4. ...Have you ever tried to follow definite rules regarding your eating in order to influence your shape or weight; for example, a calorie limit, a set amount of food, or rules about what or	0	1	2	3	4	5	6

when you should eat?							
5. ...Have you wanted your stomach to be empty?	0	1	2	3	4	5	6
6. ...Has thinking about food or its calorie content made it much more difficult to concentrate on things you are interested in; for example, read, watch TV, or follow a conversation?	0	1	2	3	4	5	6
7. ...Have you been afraid of losing control over your eating?	0	1	2	3	4	5	6
8. ...Have you had episodes of binge eating?	0	1	2	3	4	5	6

ON HOW MANY DAYS OUT OF THE PAST 28 DAYS.....	No days	1-5 days	6-12 days	13-15 days	16-22 days	23-27 days	Every day
9. ...Have you eaten in secret? (Do not count binges.)	0	1	2	3	4	5	6
10. ...Have you definitely wanted your stomach to be flat?	0	1	2	₃	₄	5	6
11. ...Has thinking about shape or weight made it more difficult to concentrate on things you are interested in; for example, read, watch /, or follow a conversation?	0	1	2	3	4	5	6

12. ...Have you had a definite fear that you might gain weight or become fat?	0	1	2	3	4	5	6
13. ...Have you felt fat?	0	1	2	3	4	5	6
14. ...Have you had a strong desire to lose weight?	0	1	2	3	4	5	6

OVER THE PAST FOUR WEEKS (28 DAYS).......

15. ...On what proportion of times that you have eaten have you felt guilty because the effect on your shape or weight? (Do not count binges.) (Circle the number which applies.)

0. None of the times
1 A few of the times
2. Less than half the times
3. Half the times
4. More than half the times
5. Most of the times
6. Every time

---

16. ... Over the past four weeks (28 days), have there been any times when you have eaten what other people would regard as an unusually large amount of food given the circumstances? (Please circle appropriate number).

0- NO
1- YES

17. ...How many such episodes have you had over the past four weeks? (Please write the appropriate number.)

18. ....During how many of these episodes of overeating did you have a sense of having lost control?

_____

---

19. ....Have you had other episodes of eating in which you have had a sense of having lost control and eaten too much, but have not eaten an unusually large amount of food given the circumstances?

0- NO
1- YES

20. ... How many such episodes have you had over the past four weeks?

_____

---

21. ....Over the past four weeks have you made yourself sick (vomit) as a means of controlling your shape or weight?

0- NO
1- YES

22. ....How many times have you done this over the past four weeks?

_____

23. ....Have you taken laxatives as a means of controlling your shape or weight?	**0 -- NO** **1 -- YES**

24. ....How many times have you done this over the past four weeks? _____

25. ....Have you taken diuretics (water tablets) as a means of controlling your shape or weight?	**0 -- NO** **1 -- YES**

26. ....How many times have you done this over the past four weeks? _____

27. ....Have you exercised hard as a means of controlling your shape or weight?	**0 -- NO** **1 -- YES**

28. ....How many times have you done this over the past four weeks? _____

OVER THE PAST FOUR WEEKS (28 DAYS)...........
(Please circle the number which best describes your behaviour)

	NOT AT ALL	SLIGHTLY		MODERAT ELY		MARKEDLY
29. ....Has your weight influenced how you think about (judge) yourself as a person?	0	1	2	3	4	5	6
30. ....Has your shape influenced how you think about (judge) yourself as a person?	0	1	2	3	4	5	6
31. ....How much would it upset you if you had to weigh yourself once a week for the next four weeks?	0	1	2	3	4	5	6
32. ....How dissatisfied have you felt about your weight?	0	1	2	3	4	5	
33. ....How dissatisfied have you felt about your shape?	0	1	2	3	4	5	6

34. ....How concerned have you been about other people seeing you eat?	0	1	2	3	4	5	6

OVER THE PAST FOUR WEEKS (28 DAYS)...........
(Please circle the number which best describes your behaviour)

	NOT AT ALL		SLIGHTLY		MODERATELY		MARKEDLY
35 ....How uncomfortable have you felt seeing your body; for example, in the mirror, in shop window reflections, while undressing or taking a bath or shower?	0	1	2	3	4	5	6
36....How uncomfortable have you felt about others seeing your body; for example, in shared changing rooms, when swimming or wearing tight clothes?	0	1	2	3	4	5	6

37. How much do you weigh? If uncertain please give your best estimate. _____ lb.

38. How much would you like to weigh? _____lb.

39. How tall are you? If uncertain please give your best estimate. ____ ft ___ in.

40. Over the past 3 months, how many menstrual periods have you missed?

       0   1   2   3   na

41. Have you been taking birth control pills during the past 3 months?   YES   NO

42. What is your current age? ____ _ _

Appendix D

Positive and Negative Affect Schedule

PANAS

This scale consists of a number of words that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent you have felt this way in the past few weeks. Please indicate which rating best applies to you by circling the response:

1 = Very slightly or not at all; 2 = A little; 3 = Moderately; 4 = Quite a bit; 5 = Extremely

Scared	1	2	3	4	5
Nervous	1	2	3	4	5
Jittery	1	2	3	4	5
Irritable	1	2	3	4	5
Hostile	1	2	3	4	5
Afraid	1	2	3	4	5
Guilty	1	2	3	4	5
Ashamed	1	2	3	4	5
Attentive	1	2	3	4	5
Interested	1	2	3	4	5
Alert	1	2	3	4	5
Excited	1	2	3	4	5
Enthusiastic	1	2	3	4	5
Inspired	1	2	3	4	5
Proud	1	2	3	4	5
Upset	1	2	3	4	5
Distressed	1	2	3	4	5
Determined	1	2	3	4	5
Strong	1	2	3	4	5
Active	1	2	3	4	5

Appendix E

Rosenberg Self-Esteem Scale

RSE

Please circle the appropriate answer per item. Use the following scale:

1 = Strongly Agree; 2 = Agree; 3 = Disagree; 4 = Strongly Disagree

1	On the whole, I am satisfied with myself.	1	2	3	4
2	At times I think I am no good at all.	1	2	3	4
3	I feel that I have a number of good qualities.	1	2	3	4
4	I am able to do things as well as most other people.	1	2	3	4
5	I feel I do not have much to be proud of.	1	2	3	4
6	I certainly feel useless at times.	1	2	3	4
7	I feel that I'm a person of worth, at least on an equal plane as others.	1	2	3	4
8	I wish I could have more respect for myself.	1	2	3	4
9	All in all, I am inclined to feel that I am a failure.	1	2	3	4
10	I take a positive attitude toward myself.	1	2	3	4

Appendix F

Beck Depression Inventory-II

BDI-II

Instructions: This questionnaire consists of 21 groups of statements. Please read each group of statements carefully, and then pick out the **one statement** in each group that best describes the way you have been feeling during the **past two weeks, including today.** Circle the number besides the statement you have picked. If several statements in the group seem to apply equally well, circle the highest number for that group. Be sure that you do not choose more than one statement for any group, including Item 16 (Changes in Sleeping Pattern) or Item 18 (Changes in Appetite).

1. Sadness

- 0 I do not feel sad.
- 1 I feel sad much of the time.
- 2 I am sad all the time.
- 3 I am so sad or unhappy that I can't stand it.

2. Pessimism

- 0 I am not discouraged about my future.
- 1 I feel more discouraged about my future than I used to be.
- 2 I do not expect things to work out for me.
- 3 I feel my future is hopeless and will only get worse.

3. Past Failure

- 0 I do not feel like a failure.
- 1 I have failed more than I should have.
- 2 As I look back, I see a lot of failures.
- 3 I feel I am a total failure as a person.

4. Loss of Pleasure

- 0 I get as much pleasure as I ever did from the things I enjoy.
- 1 I don't enjoy things as much as I used to.
- 2 I get very little pleasure from the things I used to enjoy.
- 3 I can't get any pleasure from the things I used to enjoy.

5. Guilty Feelings

- 0 I don't feel particularly guilty.
- 1 I feel guilty over many things I have done or should have done.
- 2 I feel quite guilty most of the time.
- 3 I feel guilty all of the time.

6. Punishment Feelings

0   I don't feel I am being punished.
1   I feel I may be punished.
2   I expect to be punished.
3   I feel I am being punished.

7. Self-Dislike

0   I feel the same about myself as ever.
1   I have lost confidence in myself.
2   I am disappointed in myself.
3   I dislike myself.

8. Self-Criticalness

0   I don't criticize or blame myself more than usual.
1   I am more critical of myself than I used to be.
2   I criticize myself for all of my faults.
3   I blame myself for everything bad that happens.

9. Crying

0   I don't cry anymore than I used to.
1   I cry more than I used to.
2   I cry over every little thing.
3   I feel like crying, but I can't.

10. Agitation

0   I am no more restless or wound up than usual.
1   I feel more restless or wound up than usual.
2   I am so restless or agitated that it's hard to stay still.
3   I am so restless or agitated that I have to keep moving or doing something.

11. Loss of Interest

0   I have not lost interest in other people.
1   I am less interested in other people or things than before.
2   I have lost most of my interest in other people or things.
3   It's hard to get interested in anything.

12. Indecisiveness

0   I make decisions about as well as ever.
1   I find it more difficult to make decisions than usual.
2   I have much greater difficulty in making decisions than I used to.
3   I have trouble making any decisions.

13. Worthlessness

0   I do not feel I am worthless.
1   I don't consider myself as worthwhile and useful as I used to.
2   I feel more worthless as compared to other people.
3   I feel worthless.

14. Loss of Energy

0   I have as much energy as ever.
1   I have less energy than I used to have.
2   I don't have enough energy to do very much.
3   I don't have enough energy to do anything.

15. Changes in Sleeping Pattern

0   I have not experienced any change in my sleeping pattern.
1a   I sleep somewhat more than usual.
1b   I sleep somewhat less than usual.
2a   I sleep a lot more than usual.
2b   I sleep a lot less than usual.
3a   I sleep most of the day.
3b   I wake up 1-2 hours early and can't get back to sleep.

16. Irritability

0   I am no more irritable than usual.
1   I am more irritable than usual.
2   I am much more irritable than usual.
3   I am irritable all the time.

17. Changes in Appetite

0 I have not experienced any changes in my appetite.
1a My appetite is somewhat less than usual.
1b My appetite is somewhat greater than usual.
2a My appetite is much less than before.
2b My appetite is much greater than usual.
3a I have no appetite at all.
3b I crave food all the time.

18. Concentration Difficulty

0 I can concentrate as well as ever.
1 I can't concentrate as well as usual.
2 It's hard to keep my mind on anything for very long.
3 I find I can't concentrate on anything.

19. Tiredness or Fatigue

0 I am no more tired or fatigued than usual.
1 I get more tired or fatigued more easily than usual.
2 I am too tired or fatigued to do a lot of things I used to do.
3 I am too tired or fatigued to do most of the things I used to do.

20. Loss of Interest in Sex

0 I have not noticed any recent change in my interest in sex.
1 I am less interested in sex than I used to be.
2 I am much less interested in sex now.
3 I have lost interest in sex completely.

Appendix G

Word List

Word List

Please rate the valence of each of the words listed below. The valence of a word describes how positively or negatively you feel about it. If you think the word is very negative, please circle the -3. If you think the word is very positive, please circle the 3. If the word is neutral in valence to you, please circle the 0. Words that are intermediate should be rated between the two extremes. Feel free to use the entire range of numbers. Do not be concerned with how often you use a particular number.

	VALENCE		
Word	Very Negative		Very Positive
Appealing	-3 -2 -1	0	1 2 3
Bad	-3 -2 -1	0	1 2 3
Blame	-3 -2 -1	0	1 2 3
Charming	-3 -2 -1	0	1 2 3
Cheer	-3 -2 -1	0	1 2 3
Chubby	-3 -2 -1	0	1 2 3
Chunky	-3 -2 -1	0	1 2 3
Dazzling	-3 -2 -1	0	1 2 3
Desirable	-3 -2 -1	0	1 2 3
Devoted	-3 -2 -1	0	1 2 3
Eager	-3 -2 -1	0	1 2 3
Enchanting	-3 -2 -1	0	1 2 3
Enormous	-3 -2 -1	0	1 2 3
Flabby	-3 -2 -1	0	1 2 3
Friendly	-3 -2 -1	0	1 2 3
Glamorous	-3 -2 -1	0	1 2 3
Glorious	-3 -2 -1	0	1 2 3
Guilty	-3 -2 -1	0	1 2 3

Word	Very Negative						Very Positive
Happy	-3	-2	-1	0	1	2	3
Heavy	-3	-2	-1	0	1	2	3
Helpless	-3	-2	-1	0	1	2	3
Hopeful	-3	-2	-1	0	1	2	3
Huge	-3	-2	-1	0	1	2	3
Hurt	-3	-2	-1	0	1	2	3
Joy	-3	-2	-1	0	1	2	3
Lean	-3	-2	-1	0	1	2	3
Lively	-3	-2	-1	0	1	2	3
Lovely	-3	-2	-1	0	1	2	3
Lucky	-3	-2	-1	0	1	2	3
Peaceful	-3	-2	-1	0	1	2	3
Petite	-3	-2	-1	0	1	2	3
Pleasant	-3	-2	-1	0	1	2	3
Pleased	-3	-2	-1	0	1	2	3
Rejected	-3	-2	-1	0	1	2	3
Sad	-3	-2	-1	0	1	2	3
Sexy	-3	-2	-1	0	1	2	3
Skinny	-3	-2	-1	0	1	2	3
Slender	-3	-2	-1	0	1	2	3
Slim	-3	-2	-1	0	1	2	3
Small	-3	-2	-1	0	1	2	3
Smile	-3	-2	-1	0	1	2	3
Striking	-3	-2	-1	0	1	2	3
Stunning	-3	-2	-1	0	1	2	3
Stylish	-3	-2	-1	0	1	2	3
Sunny	-3	-2	-1	0	1	2	3

VALENCE

VALENCE							
Word	**Very Negative**						**Very Positive**
Thin	-3	-2	-1	0	1	2	3
Tiny	-3	-2	-1	0	1	2	3
Toned	-3	-2	-1	0	1	2	3
Tragic	-3	-2	-1	0	1	2	3
Upset	-3	-2	-1	0	1	2	3
Weakness	-3	-2	-1	0	1	2	3
Worse	-3	-2	-1	0	1	2	3

Appendix H

Outlier Analysis

Outlier Analysis

Outlier Analysis at Time 1

Variable	z-score > +/- 3.00 among outliers
EDE-Q	
Eating Concerns	4.24
	3.17
	3.17
Global	3.15
PANAS	
Negative Affect Scale	3.80
	3.07
RSE	-3.16
BDI-II	3.70
	3.58
	3.32
	3.32
	3.19
Word List	3.23
	-3.70
	-3.11
BMI	5.38
	4.68
	3.55

3.29

3.26

Outlier Analysis at Time 2

Variable	z-score > +/- 3.00 among outliers
EDE-Q	
Restraint	4.42
Eating Concerns	4.˄˜
Global	3.19
Word List	3.58
	3.45
	3.08

Appendix I

Missing Data

Missing Data

Missing Data at Time 1

Variable	Number of Subjects With Prorated Data	Number of Subjects Excluded	Final Number of Subjects in Analysis
EDE-Q			
Restraint	2	0	269
Eating Concerns	4	1	268
Shape Concerns	6	5	265
Weight Concerns	1	1	268
Global	12	6	263
PANAS			
Positive Affect	8	7	262
Negative Affect	13	7	262
BDI-II	7	5	264
RSE	7	1	268
Word List	7	0	269

Missing Data at Time 2

Variable	Number of Subjects With Prorated Data	Number of Subjects Excluded	Final Number of Subjects in Analysis
EDE-Q			
Restraint	0	6	53
Eating Concerns	1	6	53
Shape Concerns	1	6	53

Weight Concerns	0	6	53
Global	2	6	53
PANAS			
Positive Affect	1	6	53
Negative Affect	1	6	53
BDI-II	2	8	51
RSE	3	6	53
Word List	7	8	51

Appendix J

Satisfaction Measure

Satisfaction Measure

These next questions ask you about your opinion of the Turning Points Program. Please circle the appropriate answer per item. Use the following scale:

1 = Strongly Disagree; 2 = Agree; 3 = Disagree; 4 = Strongly Disagree

1	On the whole, I am satisfied with the program.	1	2	3	4
2	I would recommend the program to other people my age.	1	2	3	4
3	I feel that I did benefit from this program.	1	2	3	4