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# Coping and emotional intelligence in women with a history of eating disordered behavior



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## **Abstract**

*Eating disorders pose a serious problem in our society. Studies have found that there is a negative correlation between eating disorders and emotional coping mechanisms, a factor of emotional intelligence (EI). This study was designed to discover if women who have a history of eating disorders resemble women who report no current or past history of eating disorders and women with current eating problems. Participants included 157 college females. It was found that women who reported a history of eating problems resembled the control group on most measures.*

## **Introduction**

Eating disorders pose a serious problem in our society. According to the Diagnostic and Statistical Manual of Mental Disorders 4th Edition Text Revised (DSM-IVTR), anorexia nervosa affects between .5 to 1% of females ages 14 to 18 (APA, 2000). Many more women are affected at a subclinical level. Anorexia is one of the deadliest mental health disorders; approximately 1 in 10 patients with anorexia will die of medical complications or suicide (Office on Women's Health, 2006). The symptoms of anorexia include: a refusal to maintain normal body weight (body weight less than 85% of what is expected); intense fear of becoming fat even when very slim; distorted self-image (patient sees herself as fat when she is not); and loss of menstrual cycles (DSM-IVTR, APA, 2000, pg. 589). There are two types of anorexia: 1) restricting type, where the person significantly reduces calorie intake and 2) binge-purge type, where the person has episodes of significant overeating followed by extreme efforts to get rid of the food (i.e., vomiting, laxative use, diuretics, or enemas). Approximately 50% of individuals with anorexia will later develop bulimia nervosa (ANRED, 2006).

Bulimia Nervosa affects 1-3% of women (DSM-IVTR, APA, 2000). Individuals with this disorder also experience significant concerns in regard to their body image, particularly shape and weight. While they tend to maintain normal or slightly above average weight, they engage in extreme binge episodes, followed by some form of compensatory behavior. For those with the purge type of bulimia, the behavior tends to be self-induced vomiting, laxative use, diuretics, or enemas. For the non-purge type, the behavior may include fasting or excessive exercise. Individuals with bulimia are at high risk for numerous medical complications, such as electrolyte imbalance, cardiac arrest,



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esophageal erosion or tears, dental problems, and other impulse control problems such as substance abuse (Office of Women's Health, 2006).

The most recently recognized eating disorder is binge eating. This may be the most common eating problem. Some researchers hypothesize that 15-50% of individuals participating in weight loss programs are binge eaters (DSM-IVTR, APA, 2000). Binge eaters consume extremely large amounts of food in short time periods. They report a lack of control while eating, and during these episodes, they may eat more quickly than normal, eat until they are uncomfortably full, eat when they are not hungry, and eat alone out of embarrassment. Many indicate that they feel guilty and unhappy after the binge. The complications that arise from this disorder are related to being overweight or obese and include high cholesterol, diabetes, and high blood pressure. Many are depressed (Office of Women's Health, 2006). Obesity, whether it involves binge eating or not, has become a significant problem in the U.S. Based on the 2003 Youth Risk Surveillance Report, 13.5% of U.S. students are overweight and an additional 15.4% are at risk for becoming overweight (CDC, 2004).

The final category is Eating Disorder Not Otherwise Specified (NOS). Individuals with this disorder do not quite fit the other diagnoses, but clearly exhibit eating disordered behavior. They may binge less frequently, not quite fall below the 85th percentile in weight, or purge after eating smaller amounts of food (DSM-IVTR, APA, 2000). Disordered eating is a common problem in America's youth. Recent research indicates that 13.3% of students report going without eating for longer than 24 hours to lose weight. Approximately 9% have taken diet pills, liquids or powders, and 6% have vomited or taken laxatives (Youth Risk Behavior Surveillance Survey, CDC, 2004).

Given the seriousness of these problems, a considerable amount of research has been conducted to better understand what variables correlate and/or predict the onset of eating disordered behavior. One area of particular interest has involved the relationship between eating disorders and emotions. For example, studies on individuals with anorexia have found that they have difficulty recognizing negative emotions in the faces and voices of others (Kucharska-Pietura, Phillips, Gernand, & David, 2003) and that they suppress their own negative feelings which appears to be related to interpersonal relationship problems and body dissatisfaction (Geller, Cockell, Hewitt, Goldner, & Flett, 2000). Gattellari and Huon (1997) found that people associate emotions with food. For people who feel the need to restrain themselves in regard to food, "forbidden" foods like carbohydrates and sweets are associated with pleasure, relaxation, and friendship. Unfortunately, the participants in this study also linked these foods to guilt and anxiety. Heatherton and Baumeister (1991) proposed a theory that eating in response to emotional arousal is a coping mechanism to deal with unpleasant emotions. Indeed stress and negative emotion have been repeatedly linked to binge eating (e.g., Abraham & Beumont, 1982; Costanzo, Mustante, Friedman, Kern, & Tomlinson, 1999). Thus, it appears that emotions and coping are related to eating disordered behavior.

Moreover, current mood problems and anger management play a part in the organization of emotions. Women with eating disorders are often times suffering from depressive symptoms (Matos, 2002). Coping strategies also play an important role in eating disorders. Women with past or current eating disorders use proportionately less purposeful problem solving and confrontive coping, and they seek less social support compared with dieting

women and women who are not dieting (Ghaderi & Scott, 2000).

Recently, a handful of researchers have begun to study the link between the construct of emotional intelligence and eating disordered behavior. Emotional intelligence, which grew out of the industrial organizational psychology literature, involves "the capacity to perceive emotions, assimilate emotion-related feelings, understand the information of those emotions, and manage them" (Mayer, Salovey & Caruso, 1999, p. 267). Based on the previous literature, the assumption is that individuals with eating disordered behavior would have a lower level of emotional intelligence than those without eating problems. Several initial studies using the research version of the emotional intelligence survey created by Mayer and Salovey found a negative correlation between eating disordered thoughts and behaviors and emotional intelligence (e.g., Bair & Rotzien, 2001; Rotzien, 2000; Rotzien, Radisic, Bair, & Rakers, 2001). Bair & Rotzien (2001) found that participants who reported being uncomfortable with negative emotions and overeating in response to them had lower levels of emotional intelligence. A follow-up manuscript that is currently under review by Cage, Pawlow, Daus, & Rotzien found similar results using the standardized and published emotional intelligence instrument. These are promising findings because emotional intelligence is believed to be a malleable skill. It is possible that improving an individual's ability to understand and manage emotions could serve as a treatment and prevention goal. Of course, many questions still remain.

Another method for testing the relationship between coping and emotional intelligence is to examine individuals who have recovered from eating disorders. If there is a strong relationship between these variables,

it seems that individuals who no longer engage in eating disordered behavior would have similar coping skills and emotional intelligence levels as individuals who have never had significant eating problems. Conversely, it is possible that individuals with a history of eating problems maintain their difficulties with emotions and thus would be more like individuals with current eating problems.

The purpose of the current study is to compare three groups of women on emotional eating, emotional expression, psychological functioning, anger management, coping skills, and emotional intelligence. The first group will be women who report a history of eating disordered behavior, but no current problems in this area. The second group will include women who report current eating disordered behavior, and the third group will include women with no current or previous eating disordered behavior. There are two hypotheses that will be examined. The first hypothesis is that women with a history of eating disordered behavior will more closely resemble women with no history of disordered eating on emotional intelligence. Specifically, women reporting current eating problems will have the lowest emotional intelligence scores, lending some credence to the idea that poor emotional identification and control are related to eating disorders. On the other hand, women who have no history of eating problems and those reporting that they no longer have eating problems will score higher on emotional intelligence; thereby, providing further support for the aforementioned theory. The second hypothesis is that women who have “recovered” from their eating issues will resemble the control group on other variables commonly associated with eating disorders including: body image, current mood problems, emotional eating, anger, self-silencing, and coping.

## Method

### *Participants*

The participants for this study were drawn from a larger sample of 538 college females. These women were recruited from the Introductory Psychology subject pool and received partial course credit for their participation. The mean age of the participants was 18.78 (SD = 5.0). A majority of the sample was Caucasian (85%), with the remainder including Black/African American (5%), Asian/Pacific Islander (4%), Hispanic (2.8%), Other/Biracial (2.6%), and Native American (.2%); a small proportion of the sample left this item blank. A majority of the sample was freshmen (80%) or sophomore (14%), and most lived in dorms (69%) or in apartments off campus (17%). This sample only includes females, because they tend to be the most likely to experience eating disorders. This study included 157 women; 51 women with a history of eating disordered behavior, 55 women with no history of eating disordered behavior, and 51 women with current eating disordered behavior.

### *Instruments*

Each participant completed a demographic questionnaire to obtain information on age, ethnicity, dieting history, and family history of psychological, health, and eating problems. The *Eating Disorder Inventory-2 (EDI-2)* (Garner, 1991) is a 91-item, self-report measure, which has been validated on both clinical and non-clinical populations and assesses the level of eating disorder symptomology. The individual responds to items using a 6-point scale (Always to Never). The measure has eight major subscales: Drive for Thinness, Ineffectiveness, Body Dissatisfaction, Interpersonal Distrust, Bulimia, Perfectionism, Maturity Fear, Introceptive Awareness, and

three provisional subscales: Impulse Regulation, Social Insecurity, and Asceticism. The EDI-2 is a strong measure with test-retest reliability coefficients of .80 and above. Internal consistency coefficients are also above .80. Factor analytic studies have confirmed the 8-scale structure, and several studies demonstrate evidence of positive correlations with personality measures and convergent validity in relation to other eating disorder measures. To examine body image, adapted versions of *Standard Figural Stimuli* (Silberstein, Striegel-Moore, Timko, & Rodin, 1988) and the *Body Shape Questionnaire (BSQ-10)* (Cooper, Taylor, Cooper, & Fairburn, 1987) were used. On the figural stimuli, participants examined figures of increasing size and noted which figure looked most like them and which figure they wanted to look like. On the BSQ, they rated their happiness or comfort with various body parts. The *Emotional Eating Scale (EES)* (Arnow, Kenardy, & Agras, 1995), a 25-item, self-report questionnaire, contains three subscales that reflect eating in response to various mood states. The *Silencing the Self Scale (STSS)* (Jack & Dill, 1992) is a 24-item, self-report measure of cognitive schemas related to intimate relationships. The *Brief Symptom Inventory (BSI)* (Cooper, Taylor, Cooper, & Fairburn, 1987) consists of 53 items and assesses for psychological problems such as depression or anxiety. The BSI scales include: Somatization, Obsession-Compulsion, Interpersonal Sensitivity, Depression, Anxiety, Hostility, Phobic Anxiety, Paranoid Ideation, and Psychoticism. It also provides three global indices of distress: Global Severity Index, Positive Symptom Distress Index, and Positive Symptom Total. Derogatis (1993) reported that the BSI had good internal consistency reliability on the nine dimensions ranging from .71 to .85. No data are provided for the global

indices. Test-retest reliability ranges from .68 to .91. Factor analysis results indicate good validity as well. The *State-Trait Anger Expression Inventory-2* (STAXI-2) is a 57-item measure of anger feelings and expression. STAXI-2 includes the following subscales: Feeling, Feel Like Expressing Anger Verbally, Feel Like Expressing Anger Physically. Trait anger includes: Angry Temperament and Angry Reaction. Additional scores examine the expression of anger toward persons or objects in the environment, the suppression of anger, and the conscious control of anger. Reliability and validity data support the use of the instrument (Forgays, Forgays, & Spielberger, 1997). The *Mayer Salovey and Caruso Emotional Intelligence Test* (MSCEIT; Mayer, Salovey, & Caruso, 2002) is a 141-item, ability-based assessment of emotional intelligence with four subscales that measure how well people perform tasks and solve emotional problems. It has been shown to have good levels of reliability and convergent and discriminant validity. Finally, the *Coping Inventory for Stressful Situations* (CISS; Endler & Parker, 1990) is a 48-item inventory that measures three types of coping: Task-Oriented, Emotion-Oriented, and Avoidance Coping. It also identifies two types of avoidance patterns: Distraction and Social Diversion.

*Procedure*

Data were collected in groups during a two-hour session. During the session, the investigator obtained informed consent and asked each participant to complete the study materials, which included all of the instruments. We maintained the anonymity of each of the participants by assigning a number to their packets. The only place their names appeared was on the informed consent. For the BMI, we obtained each participant's height and weight in a separate room. At the end of the session, each participant was given a debriefing form that reviewed the general

aims of the study, the prevalence rate and seriousness of eating disorders in our society, and offered suggestions for seeking assistance if an eating problem is suspected. To protect the confidentiality of the participants and the integrity of the data, the materials were kept in a locked file cabinet in the principal investigator's office.

**Results**

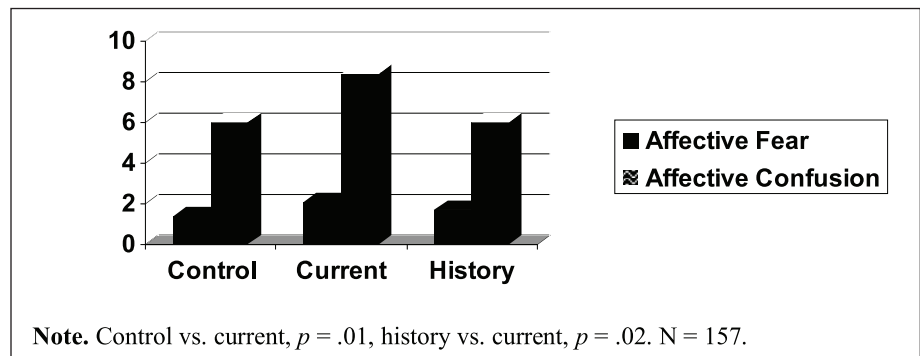
A Multivariate Analysis of Variance (MANOVA) was used to test the emotional intelligence scores of the three groups. It revealed no differences between the eating disordered groups on the total emotional intelligence total score,  $F(2, 154) = .213, p = .81$ . There were no differences between the groups on the subscales or subtests of emotional

intelligence. Thus, our first hypothesis was not supported.

To further examine emotional functioning between the groups, an ANOVA was conducted using cluster scores from the EDI-2. Differences were found on the affective confusion scale,  $F(2, 154) = 4.1, p = .02$ , but not the affective fear scale  $F(2, 154) = 1.8, p = .17$ . Post hoc analyses revealed that for affective confusion, there were no differences between the control group and the history group, but both groups had lower scores than the current eating problem group (Figure 1).

Our second hypothesis was supported. A number of differences were found between the groups on other measures (Table 1). These differences were generally in the expected direction.

**Figure 1.** Mean Scores on EDI-2 Affective Fear and Affective Fear Scales for Eating Disorder Groups.



**Table 1.** Significant MANOVA Results

Variable	<i>F</i> ( <i>df</i> )	<i>p</i>	<i>Eta</i> <sup>2</sup>
BSQ Body Shape	13.0 (2, 154)	.00	.15
BSI-Global Severity	7.6 (2, 154)	.00	.09
Emotional Eating (Angry/Frustrated)	7.1 (2, 154)	.00	.09
Emotional Eating (Anxiety)	4.0 (2, 154)	.02	.05
Emotional Eating (Depressed)	6.3 (2, 154)	.00	.08
STAXI-Anger Expression Index	3.7 (2, 154)	.03	.05
STAXI-2 Trait Anger	3.4 (2, 154)	.04	.04
STAXI-2 Angry Temperament	3.2 (2, 154)	.05	.04
SSTS-Silencing the Self	2.4 (2, 154)	.10	.03
CISS Avoidance Coping	4.3 (2, 154)	.02	.05
CISS Social Diversion	3.4 (2, 154)	.04	.04
CISS Emotion Focused Coping	2.6 (2, 154)	.08	.03

Figure 2. Mean Score on Body Shape Questionnaire.

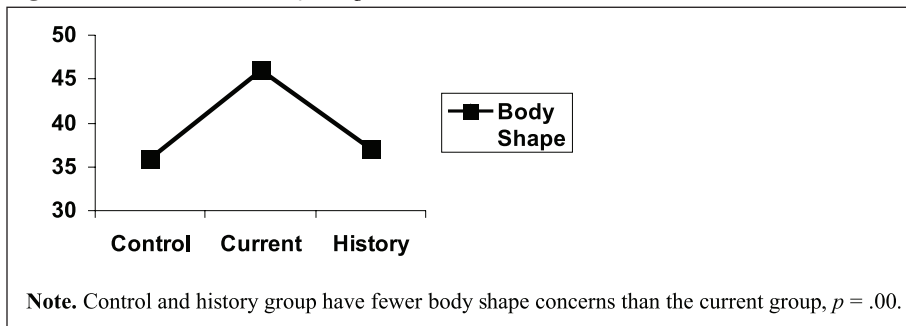


Figure 3. Mean Scores on the EES Scales.

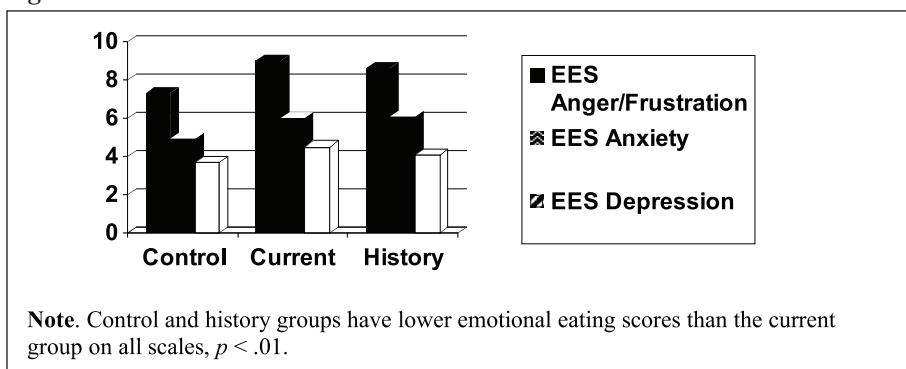
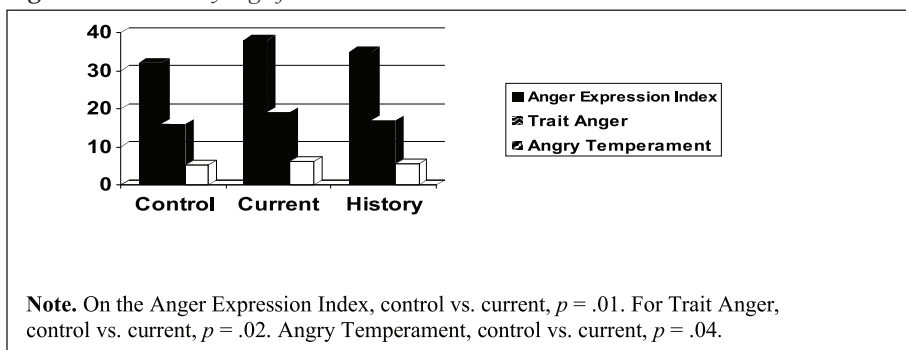


Figure 4. Statistically Significant STAXI-2 Mean Scores.



For body image, no significant differences were found between the groups on the Standard Figural Stimuli; however, significant differences were evident when participants were asked to rate their comfort with specific body parts as measured by the BSQ (Figure 2). Both the control and history groups reported experiencing fewer body image concerns than the current eating problems group. On the BSI, our measure of psychological distress, the control group reported significantly lower levels of distress than both the current eating problems group ( $p=.00$ ) and the history group ( $p=.01$ ). The current eating problems group and the history group did not differ. Specifically, individuals reporting a history of eating disorders also reported higher levels of somatization than the control group ( $p=.00$ ). Both the history group and the current problems group reported higher levels of obsessive compulsive tendencies ( $p<.02$ ), self-consciousness ( $p<.03$ ), and psychotic symptoms ( $p<.01$ ) than the control group. The current eating problems group also differed from the control group on depression and paranoia ( $p=.00$ ).

In regards to emotional eating, the control and history groups had lower levels of emotional eating when compared to the current eating disorder group (Figure 3). On the STAXI-2, differences were found between the groups on the Anger Expression Index, an overall rating of anger. The results indicate that the differences are primarily in trait or innate forms of anger and angry temperament, the tendency to experience anger without any provocation (Figure 4). The control group reported lower levels of anger than the current eating problems group. The history group did not differ significantly from either of the groups. However, it is worth noting that the history group more closely resembled the control group and exhibited

Figure 5. Mean Score on Silencing the Self Measure.

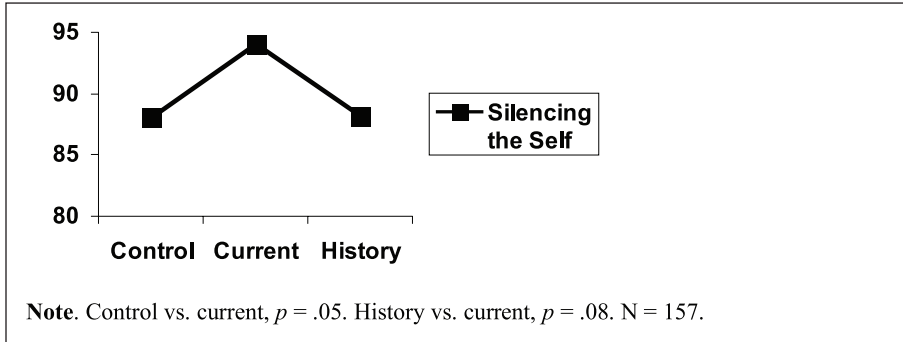
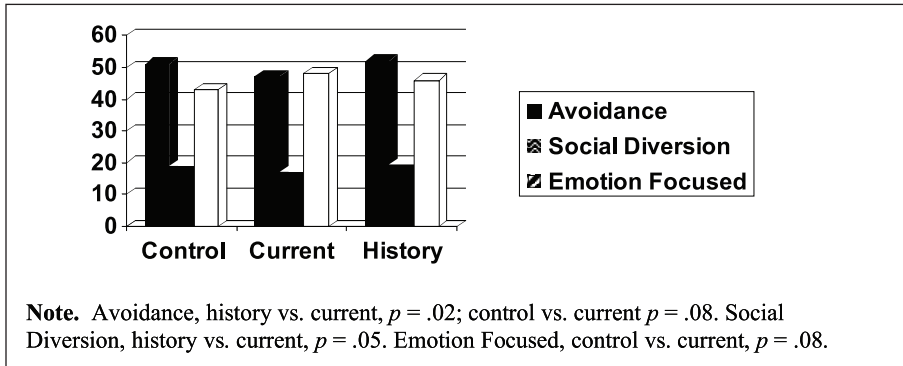


Figure 6. Mean Scores on Reported CISS Scales.



marginal ( $p=.10$ ) differences on the aforementioned scales when compared to the current eating problems group. Additional marginally significant scores were found on the silencing the self measure. As depicted in Figure 5, the control group reported significantly less self-silencing than the current eating problems group. Again, the history group was similar to the control group with marginal differences from the current eating problems group.

Lastly, differences were found in regards to coping. The chief differences were between the groups on avoidance coping via social diversion. There was a marginal difference on emotion focused coping (Figure 6). The history group reported using avoidance coping through social diversions (socializing) more than the current eating disorder group. The control group demonstrated a similar pattern with only marginal

significance. Current eating disordered participants were slightly more likely than controls to focus on reducing stress (emotion focused) when dealing with a difficult situation.

### Discussion

The aim of this study was to investigate the differences between women with current eating disordered behavior, women with a history of eating problems, and women with no current or past eating problems. Women exhibiting significant symptoms of anorexia, bulimia, or binge eating were examined. We were particularly interested in their emotional intelligence and their ability to understand and manage emotion as measured by other instruments. We also sought to investigate differences in these women on a number of other variables commonly associated with eating disorders.

We found no differences between the groups on emotional intelligence. This may have been due to several factors including: small sample size, a limited range of scores, and high score variance within groups. The sample used was small and lacked variability, particularly in regard to age and ethnicity. In order to better generalize the results of this study, future research should incorporate a larger more diverse sample. Indeed, recent studies have reported that minority adolescents and minority adults are affected substantially by eating-related problems and that the prevalence of some problems such as binge eating may be comparable to those observed in Caucasians (Barry & Grilo, 2001).

Another possible issue with the sample is the fact that we chose to combine women with a variety of eating disorders into one group. It is possible that individuals that exhibit different eating disorders demonstrate variability in emotional intelligence. We did investigate this possibility through preliminary analyses before combining the different eating problems into one group, and we did not find any significant differences, but again this may not be the norm. Moreover, our history group did not vary much in age or experience, but they did differ in regard to the length of time since their last reported eating problem (ranged from 6 months to several years). This is worth noting as it is likely that as time passes emotional functioning improves.

An additional factor may have been the limited range in emotional intelligence scores. As would be expected, most of the sample scored in the average range on emotional intelligence. This limited range made it difficult to uncover differences. It is likely that if differences do exist that they are subtle and would be more evident in an examination of patterns of performance on subscales

(i.e., detected through profiles of strengths and weaknesses). Again, a larger sample would be necessary as we found that within our groups there was a lot of variation in regard to performance on specific tasks measuring emotional intelligence.

Although significant differences were not found for emotional intelligence, significant differences were evident using other measures of emotional functioning. Participants with current eating problems reported being confused by emotions. It is possible that these individuals become easily overwhelmed by their emotional experiences and have difficulty distinguishing between types and sources of emotion. It is interesting that the emotional intelligence and EDI affective cluster score results are discrepant. This may be due to the methods used to obtain the scores. The MSCEIT, our measure of emotional intelligence, requires that the participant perform certain tasks that are scored by experts (much like other intelligence tests); whereas, the EDI is a self-report measure where the participant responds to statements using a Likert scale. Future research should further investigate the source of these discrepant scores. It is possible that although these individuals feel confused by their emotions, this confusion does not significantly impact their ability to understand and manage emotions in regard to standardized testing. In other words, emotional intelligence as measured by the MSCEIT may not generalize to the emotional intelligence needed to function in everyday life or to prevent the onset of eating problems. Or as aforementioned, it is possible that the impact of this confusion on standardized testing was not detected in this study.

Our results indicate that managing emotions in everyday life was a problem for our participants with current eating problems. They reported that their body shape concerns affect their mood

and behavior. They were more likely to engage in emotional eating when angry, depressed, and anxious. They had higher levels of anger and were more likely to experience unprovoked anger. In addition, there is some indication that they are less likely to express this anger in an effort to “protect” their relationships. This lack of assertiveness or silencing of the self in relationships can lead to increased dissatisfaction and depression (Jack & Dill, 1992). Further, these women reported higher levels of psychological distress, particularly obsessive compulsive and depressive symptoms. Finally, these women demonstrated a tendency to use emotion focused coping. This means that their coping behaviors are designed to reduce stress from emotions. While some of these behaviors may be effective and appropriate (a walk), others may be dangerous (purging).

In general, our second hypothesis was supported. Women who reported a history of eating problems resembled the control group on most of our measures. They did not report affective confusion. They did not exhibit extreme body shape concerns. They did not report problems with emotional eating or self-silencing. Their scores on anger were between the control and current groups (more similar to controls). However, they did report high levels of psychological distress, particularly in regard to somatization. Somatizers tend to focus on bodily functions and channel negative emotions into physical symptoms. Women in the history group also reported significant levels of obsessive compulsive tendencies and significant problems with self-consciousness. A final difference was that women in the history group were more likely than the other two groups to use avoidance coping. Specifically, they tend to rely on social networks to distract themselves from stress. This could be a very beneficial approach to

stress assuming that the social activities are healthy and assuming that the stressor cannot be better resolved with a specific action. Thus, this study appears to suggest that women with a history of eating problems are “healthier” than those with current eating problems, but they still have some lingering troubles. They do not differ from the control group on most variables, particularly in areas related to eating disorders. However, they have significantly more psychological problems than the control group. These findings compare to existing literature by Blaase and Elklit (2001). In their study, women who previously suffered from eating disorders were psychologically similar to the women in the control group. There were only a few significant differences found in relation to perfectionism and coping style.

Future research should continue to investigate the relationship between emotional intelligence and eating disordered behavior using a larger more diverse sample. While the variables we included in this study were useful in detecting differences between the groups, the effect sizes were rather small indicating that a more complex combination of variables could be more effective in differentiating between women with current, past, and no eating problems. Prospective researchers should also consider creating more distinct groups of eating disordered behavior, as well as controlling the length of time one has gone without engaging in unhealthy eating patterns.



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