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Coping and Gender Differences in Seasonality and Seasonal Affective Disorder

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COPING AND GENDER DIFFERENCES IN SEASONALITY AND SEASONAL

AFFECTIVE DISORDER

by

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Abstract:

Research indicates an individual's tendency to ruminate in response to seasonal changes predicts the severity of seasonality as well as Seasonal Affective Disorder (SAD). However, research on the relationship between other coping strategies and SAD is sparse. My hypothesis was that maladaptive coping strategies such as mental disengagement would be related to higher levels of SAD. My research used archival data from 607 undergraduate students who reported on SAD symptoms and a variety of other measures. Statistically significant differences between coping strategies were found for women and men. In addition, predictors of seasonality were not consistent across gender. The present study identifies gender-specific factors related to seasonality.

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Introduction:

Many individuals note that they feel more lethargic, moody and "blue" during the winter months. Measurable variations in mood and behavior patterns, which are pervasive and dependent on the seasons, are classified as ranges of "seasonality." Some individuals are more severely impacted by cyclical seasonal changes than others (Hardin et al., 1991). Seasonal Affective Disorder (SAD) is characterized by depressive symptoms that are cyclical and dependent on seasonal changes. The *Diagnostic and Statistical Manual of Mental Disorders,* the DSM-IV (APA, 2000), describes SAD as a seasonal pattern specifier, which can be applied to major depressive disorder as well as bipolar disorder. For a diagnosis of SAD to be applicable, an individual must experience two or more depressive episodes that are linked to seasonal changes (APA, 2000). Sufferers with SAD typically experience symptoms of nonseasonal depression, such as having trouble concentrating or depressed mood. In addition to these common symptoms, individuals with this disorder may also experience symptoms such as weight gain, increased appetite, increased craving for carbohydrates, and lethargy or lack of physical activity. Individuals who experience these types of symptoms are suffering a threat to their physical and emotional health (Rosenthal et al., 1984).

Research has concluded that winter Seasonal Affective Disorder (SAD) is the most widespread seasonal subtype of Major Depressive Disorder. Within this subtype, depressive symptoms begin as colder weather approaches and continue through the winter, with symptoms declining in the spring (Rosenthal et al., 1984). Because winter SAD is more common than other subtypes, individuals who reside in higher latitudes may be at a greater risk for developing the disorder. Prevalence rates of SAD are positively

correlated with residence in the northernmost latitudes of the United States (Rosen et al., 1990). In southern regions of the United States, prevalence rates have been estimated at around 3.7% (Hegde & Woodson, 1996) whereas prevalence estimates in the Northeastern United States have been estimated to be 5.8 to 9.7% (Rohan & Sigmon 2000).

There are significant gender differences in the prevalence rates of SAD. Multiple studies have shown that women have a much higher incidence of SAD, with prevalence rates of 80% (Hellekson, 1989; Rosen et al., 1990). In 1999, Lucht and Kasper looked at gender differences among patients with winter SAD. Using a Structured Clinical Interview (SCID; Spitzer, Williams, Gibbon, & First, 1992), SAD-History Questionnaire, and the Seasonal Pattern Assessment Questionnaire (SPAQ; Rosenthal et al., 1984), background information about health, lifestyle, family history, and symptomatology of depressive symptoms was gathered. Results indicated that SAD occurs more frequently in women, at a ratio of 4:1 compared to men. It was also found that females suffered from mood changes related to dark and cloudy weather at a greater rate than men (Lucht & Kasper 1999). In addition, the researchers found that within the sample, women reported thyroid disorders significantly more than men did, giving them a known vulnerability to depression. This could be a potential link to higher risk for seasonal depression as well, and has been proposed as an explanation for the seasonal patterns of SAD (Raitiere, 1992).

Although not statistically significant, there was a tendency for women to report symptoms of depression at a greater rate than men. Women were found to be more likely to use self-referral than men, who tended to be referred by doctors (Lucht and Kasper

1999). Although potential explanations have been identified, the specific causes of increased rates of SAD among women remain unspecified (Sigmon, Schartel, Boulard, & Thorpe, 2010).

Across gender, the specific etiology of Seasonal Affective Disorder is still unknown. In concurrence with research on latitude, researchers propose that light availability may be a significant biological factor associated with SAD (Rosenthal & Wehr, 1992). Reduced light availability, irregular levels of melatonin, as well as interruption of normal circadian rhythms, are all potential factors that could lead to the development of seasonal depression (Dalgleish, Rosen & Marks, 1996; Wehr et al, 2001). Researchers continue to explore biological causes of SAD, as well as the use of light therapy for treatment (Rosenthal & Wehr, 1992). Light therapy (LT), involves exposing the patient to artificial light during the winter months. However, almost half of patients diagnosed with SAD do not fully recover from light therapy alone (Terman et al., 1989).

Although it is clear that there are biological factors involved in the nature of SAD, other research indicates that the etiology of SAD is not purely biological in nature. Other factors, such as psychological aspects, may contribute to the disorder. In 1991, Michael Young conducted a study in which he found that individuals who were diagnosed with SAD believed in retrospect that they experienced vegetative symptoms (i.e., fatigue, increased sleep, increased appetite, and weight gain) first, followed by cognitive changes (i.e., depressed mood, difficulty concentrating) coupled with changes in affect (Young, Watel, Lahmeyer, & Eastman, 1991). Eight years later, Young used these initial findings to propose his empirically supported Dual Vulnerability Model of Seasonal Affective Disorder.

Young (1999) proposed that individuals with clinically diagnosed SAD have a vulnerability to be negatively impacted physiologically by fluctuations of weather and environment during the changing seasons (with excessive fatigue, increased appetite, and weight gain). Coupled with this initial vulnerability, Young proposed that individuals with SAD are also susceptible to the development of mood and cognitive disorders. This dual vulnerability model attempts to demonstrate a depressive diathesis, in which the psychological vulnerabilities actively interact with and are triggered by the vegetative changes in the environment (Young, 1999). The Dual Vulnerability Model continues to be a widely referenced theory in exploring the etiology of SAD that attempts to include psychological factors in its development.

Given that the potential etiology of SAD has been identified as extending beyond basic biological factors, there are broad ranges of possibilities for treatment options. Rohan (2007) looked at the effectiveness of light therapy (LT), cognitive-behavioral therapy (CBT), and their combination in the treatment of SAD. Adult participants with a diagnosis of SAD were randomly assigned to be in the CBT, LT, combination, or control condition, for a six-week treatment period. Results indicated that with a combination of LT and CBT, there was a significantly lower rate of remission (20%), when compared to the control group's remission rate of 73%. Cognitive-behavioral therapy, which is modified to target SAD, may be an effective therapy option for those affected by the disorder, especially in combination with light therapy (Rohan et al., 2007).

In addition to biological and psychological models, cognitive-behavioral processes have also been researched to gain insight regarding the development and maintenance of SAD. Rumination (Nolen-Hoeksema, 1987) is an example of a cognitive

process that is thought to have an effect on seasonality and Seasonal Affective Disorder. Those with a predisposition to dwell on thoughts and feelings in response to low mood are considered to have a ruminative response style. This ruminative response style has been shown to predict those at risk to develop nonseasonal depression, as well as how severe that episode is (Nolen-Hoeksema, 1991; Nolen-Hoeksema et al., 1997).

Sigmon and colleagues (2009) conducted two studies investigating the role of rumination in predicting seasonality. The first study investigated whether rumination, current weather conditions (i.e., mean temperature, photoperiod) and weather attitudes (i.e., how subjects thought the weather impacted them) were predictors of seasonality, using questionnaire responses. The Seasonal Pattern Assessment Questionnaire (SPAQ; Rosenthal et al. 1984) was used to assess levels of seasonality, and the Rumination Subscale of the Response Styles Questionnaire (RUM; Nolen-Hoeksema & Morrow, 1991) was used to assess levels of rumination in participants. Results indicated that females reported significantly higher levels of both seasonality and rumination, and results indicated that seasonality levels were predicted by current level of depressed mood, rumination tendency, current weather conditions, and weather attitudes. Results also indicated that rumination was a significant predictor of seasonality in women alone, not men (Sigmon et al., 2009).

Using the findings from the first study as a guide, Sigmon and colleagues (2009) conducted a second study in which participants completed identical surveys, but were divided into groups of high and low seasonality. Those participants who were identified as having subsyndromal levels of SAD (S-SAD) began the study with higher levels of depression and rumination than controls. It was found that the group of females high in

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seasonality (S-SAD) was the only one in which rumination was a significant predictor of depression. These two studies are significant in exploring the link between tendency to ruminate and the prediction of seasonal depression.

Rumination is not the only cognitive-behavioral process that has been investigated. In his later research, Young (2008) examined the symptoms of SAD within his Dual Vulnerability Model using two studies. The Dual Vulnerability Model was initially proposed to explore the initial onset of SAD over a period of weeks. Young proposed that his model could be extended to look at daily symptomatology. According to Young, on any one day, individuals who experience SAD symptoms will report a varying severity of vegetative symptoms. This contention holds especially true during the fall and the spring, when there is more variability of vegetative symptoms as a result of the inconsistent weather patterns. Young's hypothesis asserted that daily cognitive-affective symptoms, or daily moods, fluctuate in response to these varying vegetative symptoms. In addition, the relationship between these two pieces of symptomatology is moderated by susceptibility to mood disorders (Young, Reardon, & Azam, 2008).

Young used two separate studies to explore his hypothesis. In both studies, participants recorded vegetative symptoms and mood variability daily. In the first study, Young used a non-clinical sample of college students who self-reported vegetative symptoms and changes in mood using the Seasonal Patterns Assessment Questionnaire (SPAQ), every day for an estimated eight weeks. Furthermore, participants were assessed for trait neuroticism, as well as trait ruminative response style. In the second study, Young used a clinical sample of individuals formally diagnosed with SAD. He examined their actual cognitive-affective symptoms and fatigue level, as well as their self-reported

measures of cognitive-affective symptoms and fatigue for 14 consecutive days (Young, Reardon, & Azam, 2008).

In both samples, Young and colleagues (2008) found that cognitive vulnerability to mood disorders interacts with vegetative symptoms to predict the mood and affect patterns consistent with SAD symptomatology. Consequently, and significant with Young's initial hypothesis, both studies supported the proposal that rumination could be a moderating factor that affects the relationship between daily cognitive-affective symptoms and vegetative symptoms, Specifically in the second study, Young found that there was indeed a positive correlation between level of rumination on fatigue and low mood. The results of both studies suggest that rumination was a significant contributor to the negative impact on symptoms of SAD (Young, Reardon, & Azam, 2008). These noteworthy results suggest that specific cognitive vulnerabilities can contribute to the development and maintenance of SAD, in turn affecting physical health and well-being.

Other researchers have examined cognitive-behavioral factors that may be associated with SAD and also investigated the link between seasonal and nonseasonal depression. For example, Rohan and colleagues (2003) examined whether different pyschophysiological, cognitive, and biological factors associated with depression (i.e., negative automatic thoughts, activity enjoyment, activity frequency, response style, and dysfunctional attitude) were also associated with SAD. The study matched women with a clinical diagnosis of SAD with female control participants. The researchers used the Seasonal Pattern Assessment Questionnaire (SPAQ; Rosenthal et al., 1984), Automatic Thoughts Questionnaire (ATQ; Hollon & Kendall, 1980) and the Pleasant Events Questionnaire (PES; MacPhillamy & Lewinsohn, 1982), to collect information on the

specific factors. In addition to these specific questionnaires, participants completed a psychophysiological task in which they observed outdoor photographs with different light intensities involved (i.e., bright light/sunny, low light/cloudy, and indistinguishable light). Participants observed the photos as their skin conductance responses (SCR) were measured (Rohan, Sigmon, & Dorhofer, 2003).

The researchers (Rohan, Sigmon, & Dorhofer) found that female participants with a history of SAD reported more symptoms of depression than controls without a history of SAD, as well as more automatic negative thoughts. These results suggested that the automatic thought patterns appearing within the SAD history women were more trait-like than the automatic thoughts typically found in nonseasonal depression. Furthermore, ruminative response style was found to be a predictor of SAD severity during the winter. A pattern of decreasing activity enjoyment from the fall that led to a more sedentary lifestyle in the winter was also found in women with a history of SAD. The results of this study were similar to the results found with nonseasonal depression, and pointed out a correlation that helps to further clarify the etiology of SAD as it is related to cognitive-behavioral factors (Rohan, Sigmon, & Dorhofer, 2003).

The psychophysiological measures mentioned have been employed in other studies of Seasonal Affective Disorder (SAD) as well, and can be helpful when trying to distinguish depression from seasonal depression. Sigmon and colleagues (2007) conducted a study in which participants were screened and placed in the Major Depression group (MDD), Major Depression with a seasonal specifier (MDD-SD), or control group. These participants watched videos of local scenes in both the summer and the winter months. The participants were told to imagine themselves in the scenes and to

imagine what they might be doing or feeling. Prior to the task, skin conductance level (SCL) was recorded as a baseline, and any significant skin conductance responses (SCR) above that baseline were recorded. In addition to the video task, participants participated in a modified Stroop Task where they were presented with four different categories of words: dark related (i.e., blackness), depressive (i.e., hopeless), light related (i.e., sunshine), and neutral (i.e., bold). Reaction time was measured by how quickly the participants were able to color-code by pressing the corresponding key that matched the color of the word on the screen (Sigmon et. al, 2007).

Results indicated that individuals with seasonal depression (MDD-SD) became more psychophysiologically aroused in response to the winter scenes than individuals with nonseasonal depression (MDD) and controls. This difference in arousal could help researchers to discriminate between seasonal and nonseasonal depression, although it is unclear if the arousal response is an inclination towards experiencing SAD symptoms, parallel response to a current episode of SAD, or a result of already experiencing an episode of SAD (Sigmon et. al, 2007).

Analysis of the modified Stroop Task indicated that individuals with both seasonal and nonseasonal depression (MDD-SAD and MDD) took significantly longer to code the depressive and dark words than controls did. This may indicate an attentional bias to depressive stimuli. In addition to depressive and dark words, those individuals in the MDD group took a longer time to code all categories of words when compared to MDD-SAD and control groups. These findings reveal the possibility of specific differences between seasonal and nonseasonal depression (Sigmon et al., 2007).

Other research has examined how individuals with SAD and nonseasonal depression may report or exhibit different reactions to seasonal stimuli (Sigmon et al., 2006). Sigmon and colleagues (2006) looked at stress reactivity and coping skills, using participants diagnosed with both seasonal and nonseasonal depression, as well as controls who had no history of depression. The hypothesis was that individuals suffering from both types of depression would have higher psychophysiological arousal to a general stress task than the nondepressed control group. It was predicted that depressed individuals in both the seasonal and nonseasonal groups would use more avoidant strategies than controls when coping with their stress, and that seasonally depressed participants would use more seasonal-specific coping styles (e.g., increasing the use of artificial light). It was also hypothesized that depressed individuals in both groups would report stressful life events having a greater impact on them over the past 6 months than the non-depressed individuals (Sigmon et al., 2006).

The study was conducted with 53 participants, and utilized measures such as the Structured Clinical Interview (SCID; Spitzer, Williams, Gibbon, & First, 1992), Life Experiences Survey (LES; Sarason et al., 1978), the COPE scale (Carver, Scheier, & Weintraub, 1989), and the SAD-COPE scale (Sigmon, 2005). Skin conductance was also measured during the completion of a stressful anagram task. Results indicated that participants in the depressed group did indeed report using more avoidance style coping than those in the control group, and seasonally depressed participants reported using more seasonal-specific coping strategies. Both depressed groups reported that negative life events had a larger impact on them than controls did. Participants were introduced to an anagram task, in which they received ten anagrams. Half of the anagrams were

solvable, but half were unsolvable and meant to create a stressor. Only nonseasonal depressed participants had more arousal in reaction to the stressor than controls. These results suggest that seasonal and nonseasonal depression are not identical disorders. By comparing and contrasting the different types of depression, researchers will better be able to distinguish and understand the unique aspects of SAD as they develop treatments (Sigmon et al., 2006).

Sigmon and colleagues (2010) conducted another study to again compare and contrast individuals with major depression (MDD), major depression with a seasonal specifier (MDD-SAD), and controls, this time examining activity level frequency, activity enjoyment, and seasonal mood variations. Participants were assessed using the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID; First et al. 1995), the Seasonal Pattern Assessment Questionnaire (SPAQ; Rosenthal, Bradt, & Wehr, 1984), and the Activity Level Questionnaire (ALQ; Boulard et al., 2000). Results indicated that women with both MDD and MDD-SAD reported less enjoyment of activity as well as lower activity frequency during the entire year, and more prominently during winter months. Those women with SAD reported that their mood and energy increased with an increase in both temperature and sunshine. This study highlights the implications of depressive disorders to physical health, and the need to find effective treatment tailored appropriately for the differences between Major Depressive Disorder and Seasonal Affective Disorder (Sigmon, Schartel, Boulard, & Thorpe, 2010).

Once a literature review has been conducted, it becomes clear that the specific comparison of, and distinction between, seasonal and non-seasonal depression, has been explored only a few times. Additionally, sex differences (i.e., differences in the ways that

men and women experience symptomatology of depression and cope with depression) are often addressed. Various studies, particularly those concerning the ruminative response (Nolen-Hoeksema, 1991; Nolen-Hoeksema et al., 1997; Young, Reardon, & Azam, 2008) highlight the idea that negative responses to distress can increase the risk of developing mood disorders, as well as exacerbate the symptoms of mood disorders. The Sigmon and colleagues (2009) study supported the idea there are gender differences in negative responses to stress, when results indicated that rumination was a significant predictor of seasonality in women, but not men. These results suggest that the different ways men and women respond to stress could impact health levels and act as a guide to identify at-risk individuals for prevention and treatment of mood disorders.

Rumination is just one example of a potentially maladaptive response to stress. The COPE scale (Carver, Weintraub, & Scheier, 1989) contains 15 subscales that provide examples for how an individual could respond to stress, making it a useful tool to explore possible predictors of seasonality and Seasonal Affective Disorder (SAD). Unfortunately, the majority of literature that expressly explores coping mechanisms focuses on non-seasonal depression.

The current study aims to address this gap in research and direct attention specifically towards seasonal depression. By comparing the ways that men and women cope, gender differences can be further identified. Once the differences in coping strategies between genders are isolated, they can be further used to explore how they may impact levels of seasonality and symptomatology of seasonal depression in men and women, and to address the astounding 4:1 ratio of the prevalence of Seasonal Affective Disorder in women vs. men (Lucht and Kasper 1999). It was hypothesized that, overall,

males and females use different coping strategies to deal with stressful life events. In addition, it was hypothesized that maladaptive coping strategies (e.g., mental disengagement) and cognitive processes (i.e., rumination, negative automatic thoughts, seasonal attitudes, perceived impact of weather conditions) are significantly related to seasonality.

Methods

Participants and Procedure

In the original data set, individuals ($N = 607$; 210 males; 397 females) were undergraduate students recruited through the University of Maine psychology department, who received course credit for participation. Ages ranged from 18 to 65 years, and the mean age was 20.36 ($SD = 5.16$) years. Of the 607 participants, 592 of them, or 97.5%, identified as Caucasian/White. There were 7 African American participants; 2 were Native American; 3 were Asian; and 3 were Hispanic. The participants answered a series of questionnaires about seasonality, negative thoughts, and rumination. The present study used a selection of these questionnaires to assess its hypotheses.

Measures

Seasonal Pattern Assessment Questionnaire (SPAQ)

The Seasonal Pattern Assessment Questionnaire (SPAQ; Rosenthal, Bradt, & Wehr, 1984) is a measure designed to be used a trait screening measure that assesses seasonality level, or the degree to which an individual's mood and behavior changes with

the seasons. Regularly used as a screening instrument, the SPAQ can identify individuals as having seasonal depression, or subsyndromal levels of SAD (S-SAD). The Global Seasonality subscale (GSS), which contains 6 items, is rated on a scale of 0 (*no change*) to 4 (*extremely marked change*), to reveal how much sleep length, mood, appetite, social activity, weight, and energy level are impacted by the changing seasons. GSS scores range from 0 to 24, with scores $\geq$ 10 indicating the presence of moderate to severe seasonality. In addition, participants self-report the severity of the change they experience on a scale from 1 (*mild*) to 5 (*disabling*), and also report if these changes are a problem for them. The SPAQ has an additional subscale of ten weather related items (i.e., sunny, cloudy, hot, cold), and participants rate these weather conditions on a scale from -3 (*very low spirits*) to 3 (*markedly improves mood or energy*).

Seasonal Attitudes Scale (SAS)

The Seasonal Attitudes Questionnaire (SAQ; Sigmon, Rohan, Boulard, Whitcomb, & Dorhofer, 2000; Sigmon et al., 2007) contains 25 items. These were designed to assess trait-like attitudes, thoughts, and behaviors toward the changing seasons (e.g., "I feel the worst during the winter months," "As winter approaches, I start to feel down toward the changing seasons"). Items are rated on a 1 (*does not describe me at all*) to 7 (*describes me very well*). Scores can range from 25 to 175. Scores range from 25 to 100 in the normal population and individuals who have SAD generally score between 130 and 175 (Sigmon et al., 2007). This measure has sufficient psychometric properties.

The Automatic Thoughts Questionnaire

The Automatic Thoughts Questionnaire (ATQ; Hollon & Kendall, 1980) measures the frequency of negative thoughts about the self, and is consistent with Beck's theory of depression (Beck et al., 1979). The survey looks at 4 different aspects of these negative thoughts: personal maladjustment and desire for change (PM/DC), negative self-concepts and negative expectations (NS/NE), low self-esteem (LSE), and helplessness. The ATQ has 30 items that are rated by how often it occurs, ranging from "*not at all*" to "*all the time*." Scores can range from 30 to 150. The higher the total score, the more automatic negative thoughts about the self an individual is likely to report.

The ATQ can adequately distinguish depressed from non-depressed participants. It has demonstrated high internal consistency (e.g., coefficient alpha of .94) in depressed participants (Hollon & Kendall, 1980). In addition, it has demonstrated split-half reliability of $r = .91$ and high correlations with other depression measures (Hollon & Kendall, 1980).

Rumination Subscale of the Response Styles Questionnaire (RSQ)

The Response Styles Questionnaire (RSQ; Nolen-Hoeksema et al., 1991) was created to measure how individuals normally respond to depressed mood. This measure is composed of 32 items assessed with a four-point Likert-scale of frequency. Responses range from 0 (*almost never*) to 3 (*almost always*). The RSQ has two subscales, the Ruminative Response Scale (RRS) and the Distractive Response Scale (DRS). The Rumination Subscale of the Response Styles Questionnaire (RUM; Nolen-Hoeksema & Morrow, 1991) is made up of 21 items (e.g., "think about how sad you feel"), also rated on a scale from 0 (*almost never*) to 3 (*almost always*). Scores can range from 0 to 63.

COPE Scale

The COPE (Carver, Scheier, & Weintraub, 1989) measures the various coping strategies that an individual may employ when dealing with stressful situations. The original COPE scale has 15 subscales: Positive Reinterpretation and Growth ("I learn something from the experience"), Active Coping ("I do what has to be done, one step at a time"), Planning ("I make a plan of action"), Seeking of Social Support for Emotional Reasons ("I discuss my feelings with someone"), Seeking of Social Support for Instrumental Reasons ("I try to get advice from someone about what to do"), Suppression of Competing Activities ("I put aside other activities in order to concentrate on this"), Religion ("I put my trust in God"), Acceptance ("I get used to the idea that it happened"), Mental Disengagement ("I daydream about things other than this"), Focus on Venting of Emotions ("I get upset and let my emotions out"), Behavioral Disengagement ("I just give up try to reach my goal"), Denial ("I act as though it hasn't even happened"), Restraint Coping ("I make sure not to make matters worse by acting too soon"), Alcohol/Drug Use ("I use alcohol or drugs to make myself feel better"), and Humor ("I laugh about the situation").

These fifteen subscales are combined into a higher-order factor structure that consists of four factors: problem-focused coping, emotion-focused coping, avoidance, and acceptance. These factors are established as having acceptable psychometric properties in prior research studies (Sigmon, Stanton, & Snyder, 1995; Sigmon, Whitcomb-Smith, Rohan, & Kendrew, 2004).

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Results

Questionnaire Results

In order to examine gender differences for the 15 COPE subscales, a MANOVA was conducted. Results indicated a significant effect for gender, Wilk's λ (15, 590) = 12.88, p < .001, partial η^2 = .25]. Follow-up univariate analyses indicated significant differences between genders for positive interpretation, $F(1,604)$ = 8.95, p = .003, partial η^2 = .02, social emotional support, $F(1,604)$ = 119.01, p < .001, partial η^2 = .16, social instrumental support, F (1,604) = 48.81, p = .000, partial η^2 = .08, mental disengagement, $F(1, 604)$ = 9.95, p = .002, partial η^2 = .016, humor coping, $F(1,604)$ = 7.58, p = .006, partial η^2 = 0.13, alcohol/drug use F (1,604) =7.17, p = .008, and emotional venting, $F(1,604)$ = 73.75, p < .001, partial η^2 = .108. There were no significant gender differences for active coping, $F(1,604)$ = .13, p =.72, partial η^2 = .00, planning coping, $F(1,604)$ = .97, p = .33, partial η^2 = .00, suppression of competing activities coping, $F(1,604)$ = .21, p = .65, partial η^2 = .00, religion coping, $F(1,604)$ = 1.22, p = .27, partial η^2 = .00, behavioral disengagement, $F(1,604)$ = 1.44, p = .23, partial η^2 = .00, denial, $F(1,604)$ = .71, p = .40, partial η^2 = .00, or restraint coping, $F(1,604)$ = 1.19, p = .28. Means and standard deviations are presented in Table 1 and the means are presented in Figure 1.

Women reported using more of the following coping strategies compared to men; positive reinterpretation and growth, social emotional support, social instrumental support, mental disengagement, and emotional venting. Men reported using more humor, and alcohol/drug use than women.

Table 1. Means and standard deviation for the COPE

Cope Subscale	Males (n = 210)	Females (n =397)	
Positive Interpretation	10.79 $_a$ (2.43)	11.45$_b$ (2.66)	
Active	10.40 $_a$ (2.78)	10.50 $_a$ (2.64)	
Planning	10.58 $_a$ (3.15)	10.86 $_a$ (3.03)	
Social Emotional Support	8.62 $_a$ (3.14)	11.61 $_b$ (3.26)	
Social Instrumental Support	9.32 $_a$ (3.02)	11.12 $_b$ (3.00)	
Suppression Competing	8.84 $_a$ (2.39)	8.77 $_a$ (2.37)	
Religion	7.48 $_a$ (3.84)	7.86 $_a$ (4.10)	
Acceptance	10.27 $_a$ (3.04)	10.12 $_a$ (2.63)	
Mental Disengagement	8.73 $_a$ (2.41)	9.37 $_b$ (2.37)	
Behavioral Disengagement	5.67 $_a$ (2.08)	5.88 $_a$ (1.95)	
Denial	5.56 $_a$ (1.97)	5.70 $_a$ (2.04)	
Restraint	8.58 $_a$ (2.57)	8.82 $_a$ (2.54)	
Humor	9.30 $_a$ (3.45)	8.52 $_b$ (3.25)	
Alcohol/Drug Use	6.14 $_a$ (3.15)	5.49 $_b$ (2.68)	
Emotional Venting	8.06 $_a$ (2.90)	10.32 $_b$ (3.19)	

Note. Subscales of the COPE. Means with different subscripts are significantly different at $p < .01$.

Figure 1. Average Means Scores for the COPE subscales

Average for COPE scores in Men vs. Women
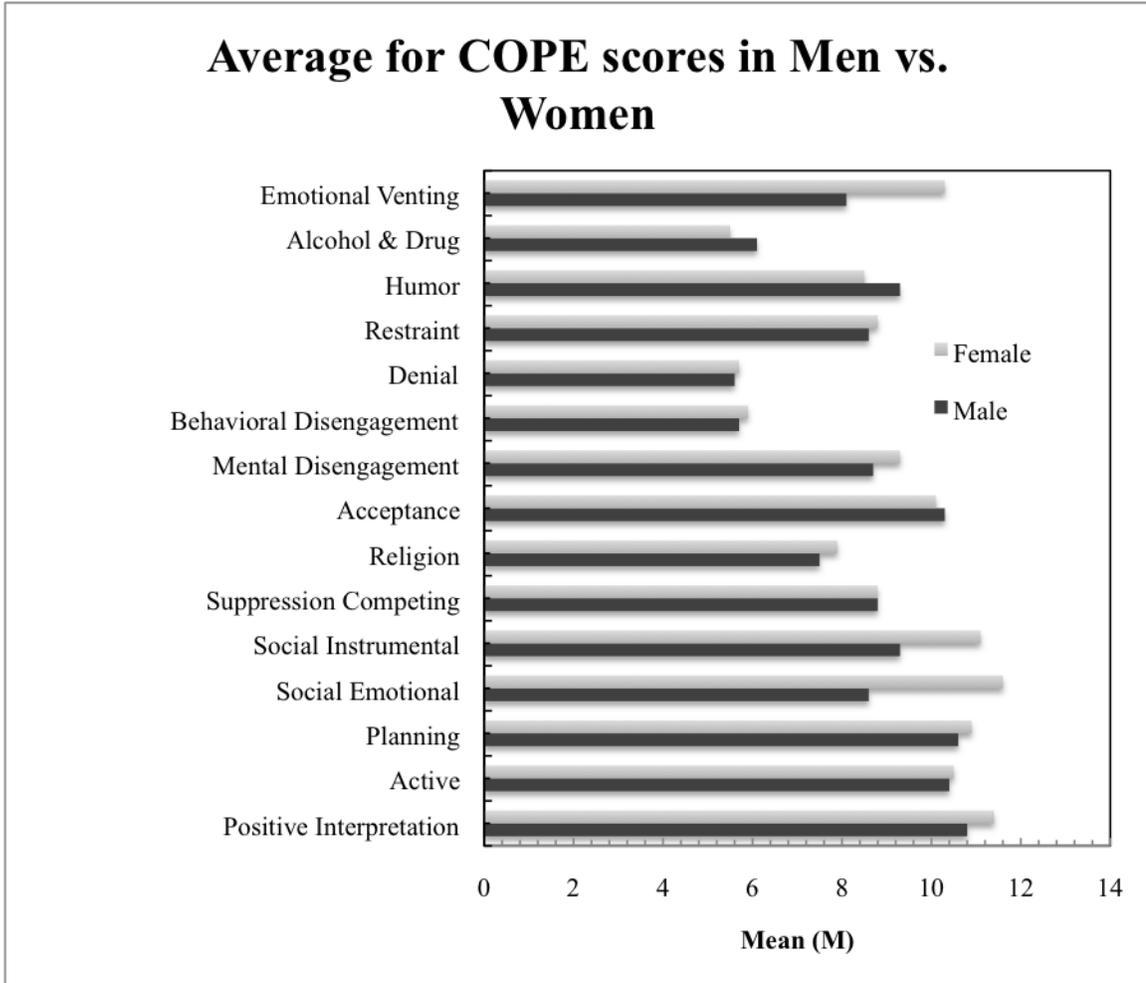
An ANOVA also revealed a significant difference between groups for average level of rumination, $F(1,606) = 39.69$, $p < .001$ and SPAQ general seasonal severity, $F(1,606) = 10.26$, $p < .001$. Women ($M = 1.26$, $SD = .56$) reported engaging in more rumination than men ($M = .96$, $SD = .56$). In addition, women ($M = 14.73$, $SD = 5.00$) scored higher on the seasonal severity scale than men ($M = 13.37$, $SD = 4.94$). Refer to Figures 2 and 3.

Figure 2. Rumination Averages
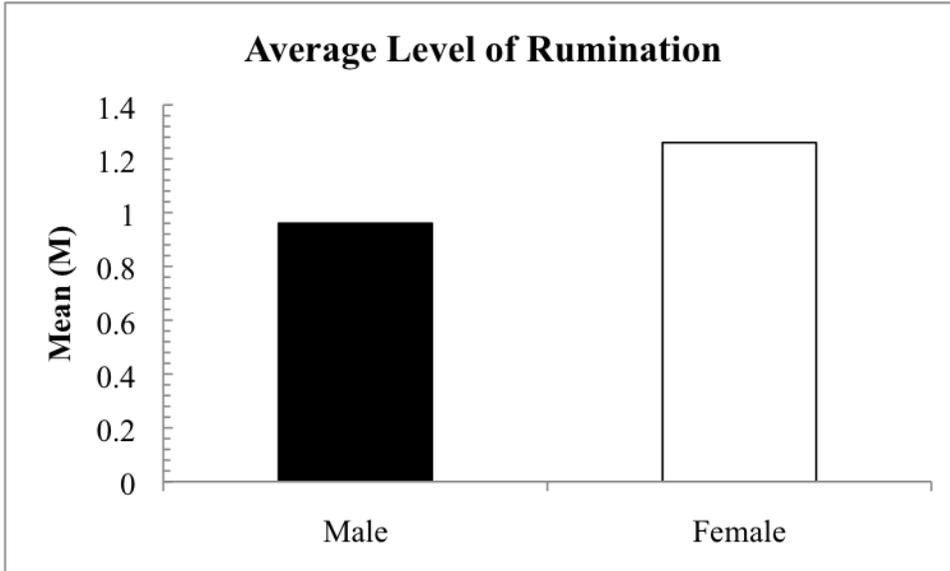
Figure 3. Seasonal Severity Scores
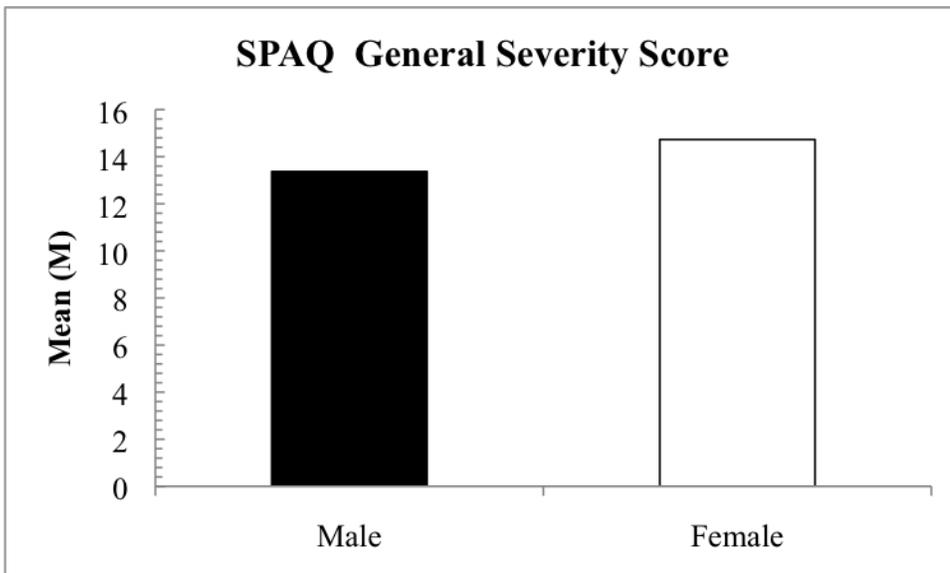
Regression Analysis

A stepwise regression was conducted to test significant predictors of seasonality for the

entire group *(N = 607),* as well as for men *(n = 210)* and women *(n = 397)* separately.

Results indicated that for the entire group (*N*= 607), significant predictors of high levels

of seasonality included negative automatic thoughts, rumination, seasonal attitudes, the

impact of sunny weather, and mental disengagement coping ($R = .505$, $R^2 = .26$). Results

are presented in Tables 2 and 3.

Table 2. Stepwise regression predicting seasonality for all participants ($N = 607$)

Model	R	R Square	Adjusted R Square	Std. Error of Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.364[a]	.132	.131	4.68564	.132	91.971	1	603	.000
2	.426[b]	.181	.179	4.55520	.049	36.029	1	602	.000
3	.465[c]	.216	.213	4.46020	.035	26.919	1	601	.000
4	.491[d]	.241	.236	4.39330	.025	19.443	1	600	.000
5	.505[e]	.255*	.248	4.35761	.014	10.867	1	599	.001

*Note. Negative automatic thoughts, average rumination, seasonal attitudes, impact of
sunny weather, and mental disengagement accounted for 25.5% of variance in overall
seasonality scores.

Table 3. Coefficients for regression predicting seasonality ($N = 607$)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Negative Automatic Thoughts	.05	.01	.20	4.93	.001
Rumination	1.70	.35	.20	4.81	.001
Seasonal Attitudes	.03	.01	.16	4.48	.001
Impact of sunny weather	.82	.19	.15	4.26	.001
Mental Disengagement Coping	.26	.08	.13	3.30	.001

For women ($n = 397$), significant predictors of seasonality were rumination, seasonal attitudes, negative automatic thoughts, and the impact of sunny weather ($R = .51$, $R^2 = .255$). Results are presented in Tables 4 and 5.

Table 4. Stepwise regression predicting seasonality in women ($n = 397$)

Model	R	R Square	Adjusted R Square	Std. Error of Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.403 a	.163	.161	4.58714	.163	76.523	1	394	.000
2	.450 b	.203	.199	4.48136	.040	19.821	1	393	.000
3	.482 c	.233	.227	4.40269	.030	15.169	1	392	.000
4	.505 d	.255*	.247	4.34432	.022	11.604	1	391	.001

Note. Rumination, seasonal attitudes, automatic thoughts, and impact of sunny weather account for 25.5% of variance in women's seasonality scores.

Table 5. Coefficients for regression predicting seasonality in women ($n = 397$)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Rumination	2.49	.44	.28	5.69	.000
Seasonal Attitudes	.02	.01	.16	3.49	.001
Negative Automatic Thoughts	.05	.01	.21	4.18	.000
Impact of sunny weather	.93	.27	.15	3.41	.001

For men alone ($n = 210$), automatic thoughts, mental disengagement, impact of cold weather, seasonal attitudes, and social instrumental support coping were significant predictors of seasonality ($R = .531$, $R^2 = .282$). The impact of cold weather was a negative predictor of seasonality. Results are presented in Tables 6 and 7.

Table 6. Stepwise regression predicting seasonality in men ($n = 210$)

Model	R	R Square	Adjusted R Square	Std. Error of Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.375 a	.141	.137	4.59912	.141	33.914	1	207	.000
2	.445 b	.198	.190	4.45395	.057	14.714	1	206	.000
3	.488 c	.238	.227	4.35155	.040	10.808	1	205	.001
4	.508 d	.258	.244	4.30464	.020	5.493	1	204	.020
5	.531 e	.282*	.264	4.24528	.024	6.745	1	203	.010

Note. Automatic thoughts, impact of cold weather, mental disengagement, seasonal attitudes, and social instrumental support account for 28% of variance in seasonality scores for men.

Table 7. Coefficients for regression predicting seasonality in men ($n = 210$)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Automatic Thoughts	.06	.02	.25	3.73	.000
Impact of cold weather	-.62	.21	-.18	-2.89	.004
Mental Disengagement	.38	.14	.19	2.83	.005
Seasonal Attitudes	.03	.01	.17	2.71	.007
Social Instrumental Support	.26	.10	.16	2.60	.010

Ancillary Results

Independent samples t-tests revealed that women reported greater seasonal attitudes and were more impacted by cold, sunny, and grey/cloudy weather conditions. Means, standard deviations and results of the t-tests are presented in the Table below.

Table 8. Ancillary Results

	Males	Females			
	M (*SD*)	M (*SD*)	t	df	Sig.
SAS	83.57$_a$ (32.13)	89.97$_b$ (33.66)	-2.27	605	.02
ATQ	48.55$_a$ (19.85)	50.27$_a$ (19.78)	-1.02	605	.31
SPAQ WI					
Cold	-.47$_a$ (1.44)	-.93$_b$ (1.44)	3.79	605	.001

Hot	.82$_a$ (1.76)	.89$_a$ (1.70)	-.46	605	.65
Sunny	2.15$_a$ (1.10)	2.54$_b$ (.81)	-4.95	605	.001
Grey/Cloudy	-.75$_a$ (1.19)	-1.00$_b$ (1.23)	2.39	605	.02

Note. Means with different subscripts are different at a minimum of $p < .05$. SAD = Seasonal Attitudes Scale; ATQ = Automatic Thoughts Questionnaire; SPAQ WI = Seasonal Patterns Assessment Questionnaire Weather Impact Items.

Discussion

The results of this study were consistent with previous findings in the literature regarding gender differences in the severity of seasonality, gender differences in coping with stress, and gender differences in levels of rumination. Women, on average, reported higher levels of rumination, as well as higher levels of seasonality based on the SPAQ.

The hypothesis that males and females use different coping strategies to deal with stressful life events was supported. Women reported using significantly greater levels of positive reinterpretation and growth, social emotional support, social instrumental support, mental disengagement, and emotional venting compared to men. The differences in coping reflect strategies that are often labeled as adaptive (e.g., positive reinterpretation and growth) as well as maladaptive (e.g., mental disengagement; Sigmon et al., 1995). Men reported using greater levels of humor and alcohol/drug use coping strategies compared to women. Alcohol and drug use in response to stress is considered maladaptive and is positively correlated with distress.

Specific maladaptive coping strategies and cognitive factors were found to be significant predictors of seasonality in the whole sample. Thus, the second hypothesis of

this study was supported. Negative automatic thoughts, rumination, seasonal attitudes, the perceived impact of sunny weather and mental disengagement predicted seasonality level. These results are consistent with previous research (e.g., Sigmon et al., 2006; Young et al., 2008). However, previous research has typically used women given the higher prevalence rates of SAD for women. One of the most interesting findings in the current study was that rumination was a significant predictor of seasonality only for women alone, not men. In addition, seasonal attitudes, negative automatic thoughts, and the impact of sunny weather were significant predictors of seasonality in women.

For men, negative automatic thoughts, mental disengagement, seasonal attitudes and social instrumental support were positive predictors whereas the impact of cold weather was a negative predictor of seasonality. Talking to others about stress in men is related to higher levels of seasonality. It would be interesting to see how men and women in the current sample would report stereotypical gender roles. It would appear that lower levels of the impact of cold weather were associated with higher levels of seasonality. This finding is interesting given the sparse research on factors that predict seasonality in men. It could be that the men in this sample engaged in more outdoor activities in the winter than women. Alternatively, women in the current sample who were more impacted by sunny weather had higher levels of seasonality. This finding may represent disparate views of the seasons and also coincides with the gender difference in seasonal attitudes. However, these are hypotheses that would need further research and support.

Current literature on seasonal depression has not been able to identify explicit etiology for the disorder. Here, it is has been found that seasonality could be increased by specific cognitive-behavioral strategies of coping with stress and perceptions about the

seasons and the weather. These results may contribute to explaining the differences in gender prevalence rates as well. Since ruminative-response style was identified as a unique predictor of seasonality in women alone, it may be a significant factor in explaining the 4:1 ratio in the prevalence of this disorder (Lucht and Kasper, 1999). Rumination has been show to be a significant factor in nonseasonal depression (Nolen-Hoeksema, 1991; Nolen-Hoeksema et al., 1997) and has been identified as worsening SAD symptoms in other literature (e.g., Rohan, Sigmon, & Dorhofer, 2003). The results of this study serve to strengthen the correlation between rumination and seasonal depressive symptoms. If additional evidence indicates that heightened rates of SAD in women are impacted by rumination, then cognitive-behavioral therapy development can focus on targeting these thought patterns to help lessen the severity of symptoms.

There is a possibility that the male predictors of seasonality (mental disengagement and social instrumental support) are cognitive tactics that do not impact levels of seasonality as severely as the ruminative response style. Perhaps mental disengagement, for example, is less problematic in worsening the symptoms of SAD. It is not yet known if coping strategies found predominantly in men, such as humor, serve as protectors against developing seasonal depression. Further research is needed.

There were some limitations to this study. Participants in this sample were predominantly college-aged and Caucasian, making it more difficult for these results to be generalized to populations throughout more diverse areas of the United States. Studies in the future should attempt to gather participants from a less homogeneous population. It is important to address that this study involved the use of self-report data. Self-report data may be influenced by certain cognitive factors; for example participants may have a

tendency to under-report or over-report their symptom severity. This study was cross-sectional, rather than longitudinal, and because data was collected at one given time, it makes it impossible to control for individual differences in self-report measures. A prospective future design should attempt to look at coping and seasonality across a longer time span.

This study contributes to existing literature by examining coping strategies and cognitive factors that may contribute to the severity of symptoms in Seasonal Affective Disorder (SAD). Prior research had not explored such a broad range of maladaptive coping strategies and cognitive factors. Because this maladaptive coping was found to predict seasonality in different ways based on gender, a possible link that could account for gender differences in prevalence rates of SAD has been identified. It is important for future research to continue investigating the link between maladaptive coping strategies and prevalence rates of seasonal depression, so that effective treatment is made available to those who suffer from this disorder. Additionally, further research will bring us one step closer to understanding the origin, etiology and prevention of Seasonal Affective Disorder.

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Appendix A: Seasonal Pattern Assessment Questionnaire (SPAQ)

SPAQ

DATE: _____ SEX: _____ AGE: _____ CURRENT WEIGHT: _____

YEARS OF EDUCATION: _____ MARITAL STATUS: _____

PLACE OF BIRTH: CITY AND STATE: _____
                          COUNTRY: _____

HOW MANY YEARS HAVE YOU LIVED IN THIS CLIMATIC AREA? :
_____
_____

The purpose of this form is to find out how your mood and behavior change over time.
NOTE: We are interested in <u>your</u> experience; <u>not others</u> you may have observed.

To what degree do the following change <u>with the seasons</u>? Please indicate the
appropriate number in front of the item.

no change	slight change	moderate change	marked change	extremely marked change
0	1	2	3	4

_____ a. sleep length   _____ b. social activity

_____ c. mood (overall feeling of well being)   _____ d. weight

_____ e. appetite   _____ f. energy level

In the following questions, circle all applicable months. You may have one circle for a
single month or you may have several circles for a cluster of months, or any grouping of
months.

At what time of the year do you:

a. feel best   Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

No particular month

b. tend to gain most weight   Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

No particular month

c. socialize most   Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

No particular month

d. sleep least   Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

No particular month e. eat most   Jan Feb Mar Apr May Jun Jul

Aug Sep Oct Nov Dec   No particular month

f. lose most weight   Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

No particular month

g. socialize least   Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

No particular month h. feel worst   Jan Feb Mar Apr May Jun Jul

Aug Sep Oct Nov Dec   No particular month

I. eat least   Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

No particular month

j. sleep most   Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

No particular month

Using the following scale, indicate how the following weather changes make you feel.
Place your response in front of the item.

-3 = in very low spirits or markedly slowed down
-2 = moderately low/slowed down
-1 = mildly low/slowed down
 0 = no effect
+1 = slightly improves your mood or energy level
+2 = moderately improves your mood or energy level
+3 = markedly improves your mood or energy level
 4 = don't know

_____ a. cold weather

_____ b. hot weather

_____ c. humid weather

_____ d. sunny days

_____ e. dry days

_____ f. grey cloudy days

_____ g. long days

_____ h. high pollen count

_____ i. foggy, smoggy days

_____ j. short days

How much does your weight fluctuate during the course of the year? (circle one)

0-3 lbs.   4-7 lbs.   8-11 lbs.   12-15 lbs.   16-20 lbs.   over 20 lbs.

Approximately how many hours of each 24-hour day do you sleep during each season?
(include naps)

_____ a. winter (Dec. 21 - Mar. 20)

_____ b. spring (Mar. 21 - June 20)

_____ c. summer (June 21 - Sept. 20)

_____ d. fall (Sept. 21 - Dec. 20)

Do you notice a change in food preference during the different seasons? Yes____   No_____
If yes, please specify the changes.

_____

_____

_____

If you experience changes with the seasons, do you feel that these are a problem for you?

Yes____ No____

If this is a problem, circle the severity: Mild   Moderate   Marked   Severe

Disabling

Appendix B: Seasonal Attitudes Scale (SAS)

SEASONAL ATTITUDES SCALES

Instructions: Please indicate to what extent the following statements about the seasons adequately describe your attitudes. There are no right or wrong answers, just indicate what _you_ generally think or feel. Put the number that corresponds to your choice in the blank before the item.

1	2	3	4	5	6
7
does not describe   describes me
describes me
  me at all   somewhat
very well

____ 1. I have always been affected by the changing seasons.

____ 2. As winter approaches, my energy level begins to decrease.

____ 3. Sunny long days make me feel the best.

____ 4. I notice that I like to eat different types of food depending on the season.

____ 5. My appetite increases as the amount of daylight decreases.

____ 6. I feel the best during the summer months.

____ 7. As winter approaches, I start to feel down.

____ 8. During the summer months, I start to feel less depressed.

____ 9. I believe I am affected by the changing seasons more than most people.

____ 10. When the seasons change, I know that it will affect my mood and behavior.

____ 11. As summer approaches, I begin to feel more energetic.

____ 12. I often think about the changing seasons and what will happen to my mood.

____ 13. I tend to gain weight during the winter months.

____ 14. My energy level starts to decrease as the amount of daylight decreases.

____ 15. During the winter months, I tend to engage in fewer social activities.

____ 16. I believe there is a close relationship between the changing seasons and my mood.

____ 17. I feel more active when there is more sunlight in the day.

____ 18. During the summer months, I tend to lose weight.

____ 19. When the days start getting shorter, I start feeling worse.

____ 20. During the summer months, I begin to feel like my old self again.

_____ 21. I feel the worst during the winter months.

_____ 22. I am very aware of how the seasons affect my mood and behavior.

_____ 23. I feel that there is little to do to improve my mood in the winter months.

_____ 24. When the amount of daylight starts increasing in the spring, I start to feel better.

_____ 25. I believe that my behavior is affected by the changing seasons.

Appendix C: Automatic Thoughts Questionnaire (ATQ)

ATQ

<u>Instructions</u>: Listed below are a variety of thoughts that pop into people's heads. Please read each thought and indicate how frequently, if at all, the thought occurred to you over the last week. Please read each item carefully and put the number in the blank that most closely corresponds to your answer
  (1 = "not at all," 2 = "sometimes," 3 = "moderately often," 4 = "often," and 5 = "all the time").

1	2	3	4	5
not at all	sometimes	moderately often	often	all the time

___ 1. I feel like I'm up against the world.

___ 2. I'm no good.

___ 3. Why can't I ever succeed?

___ 4. No one understands me.

___ 5. I've let people down.

___ 6. I don't think I can go on.

___ 7. I wish I were a better person.

___ 8. I'm so weak.

___ 9. My life's not going the way I want it to.

___ 10. I'm so disappointed in myself.

___ 11. Nothing feels good anymore.

___ 12. I can't stand this anymore.

___ 13. I can't get started.

___ 14. What's wrong with me?

___ 15. I wish I were somewhere else.

___ 16. I can't get things done.

___ 17. I hate myself.

___ 18. I'm worthless.

___ 19. Wish I could just disappear.

___ 20. What's the matter with me?

___ 21. I'm a loser.

___ 22. My life is a mess.

___ 23. I'm a failure.

___ 24. I'll never make it.

___ 25. I feel so helpless.

___ 26. Something has to change.

___ 27. There must be something wrong with me.

___ 28. My future is bleak.

___ 29. It's just not worth it.

___ 30. I can't finish anything.

Appendix D: Rumination Subscale of the Response Styles Questionnaire

RESPONSE STYLES QUESTIONNAIRE

People think and do many different things when they <u>feel depressed</u>. Please read each of the items below and indicate whether you never, sometimes, often or always think or do each one when you feel down, sad, or depressed. Please indicate what you <u>generally</u> do, not what you think you should do.

0 = Almost Never
1 = Sometimes
2 = Often
3 = Almost Always

___ 1. Think about how alone you feel.

___ 2. Think "I won't be able to do my job/work because I feel so badly"

___ 3. Think about your feelings of fatigue and achiness

___ 4. Think about how hard it is to concentrate

___ 5. Try to find something positive in the situation or something you learned

___ 6. Think "I'm going to do something to make myself feel better"

___ 7. Help someone else with something in order to distract yourself

___ 8. Think about how passive and unmotivated you feel

___ 9. Remind yourself that these feelings won't last

___ 10. Analyze recent events to try to understand why you are depressed

___ 11. Think about how you don't seem to feel anything any more

___ 12. Think "Why can't I get going?"

___ 13. Think "Why do I always react this way?"

___ 14. Go to a favorite place to get your mind off your feelings

___ 15. Go away by yourself and think about why you feel this way

___ 16. Think "I'll concentrate on something other than how I feel."

___ 17. Write down what you are thinking about and analyze it

___ 18. Do something that has made you feel better in the past

___ 19. Think about a recent situation, wishing it had gone better

___ 20. Think "I'm going to go out and have some fun"

___ 21. Concentrate on your work.

___ 22. Think about how sad you feel.

___ 23. Think about all your shortcomings, failings, faults, mistakes

___ 24. Do something you enjoy

___ 25. Think about how you don't feel up to doing anything

___ 26. Do something fun with a friend

___ 27. Analyze your personality to try to understand why you are depressed

___ 28. Go someplace alone to think about your feelings

___ 29. Think about how angry you are with yourself

___ 30. Listen to sad music

___ 31. Isolate yourself and think about the reasons why you feel sad

___ 32. Try to understand yourself by focusing on your depressed feelings

Now, we would like for you to go back through the same items and rate each of these items for how effective this strategy has been for you in helping you cope more effectively with a depressed mood and helping to alleviate a depressed mood. Use the following scale to rate the effectiveness of each of the following strategies.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

not very   extremely
effective   effective

___ 1. Think about how alone you feel.

___ 2. Think "I won't be able to do my job/work because I feel so badly"

___ 3. Think about your feelings of fatigue and achiness

___ 4. Think about how hard it is to concentrate

___ 5. Try to find something positive in the situation or something you learned

___ 6. Think "I'm going to do something to make myself feel better"

___ 7. Help someone else with something in order to distract yourself

___ 8. Think about how passive and unmotivated you feel

___ 9. Remind yourself that these feelings won't last

___ 10. Analyze recent events to try to understand why you are depressed

___ 11. Think about how you don't seem to feel anything any more

___ 12. Think "Why can't I get going?"

___ 13. Think "Why do I always react this way?"

___ 14. Go to a favorite place to get your mind off your feelings

___ 15. Go away by yourself and think about why you feel this way

___ 16. Think "I'll concentrate on something other than how I feel."

___ 17. Write down what you are thinking about and analyze it

___ 18. Do something that has made you feel better in the past

___ 19. Think about a recent situation, wishing it had gone better

___ 20. Think "I'm going to go out and have some fun"

___ 21. Concentrate on your work.

___ 22. Think about how sad you feel.

___ 23. Think about all your shortcomings, failings, faults, mistakes

___ 24. Do something you enjoy

___ 25. Think about how you don't feel up to doing anything

___ 26. Do something fun with a friend

___ 27. Analyze your personality to try to understand why you are depressed

___ 28. Go someplace alone to think about your feelings

___ 29. Think about how angry you are with yourself

___ 30. Listen to sad music

___ 31. Isolate yourself and think about the reasons why you feel sad

___ 32. Try to understand yourself by focusing on your depressed feelings

Appendix E: COPE Scale

THE COPE

<u>Instructions</u>: We are interested in how people respond when they confront difficult or stressful events in their lives. There are lots of ways to try to deal with stress. This questionnaire asks you to indicate what you generally do and feel, when you experience stressful events. Obviously, different events bring out somewhat different responses, but think about what you <u>usually</u> do when you are under a lot of stress. Please try to respond to each item <u>separately</u> in your mind from each other item. There are no right or wrong answers, so choose the most accurate answer for <u>YOU</u>, not what you think most people would say or do. Please use the following scale as you respond.

1 = I USUALLY DON'T DO THIS <u>AT ALL</u>
2 = I USUALLY DO THIS A <u>LITTLE BIT</u>
3 = I USUALLY DO THIS A <u>MEDIUM AMOUNT</u>
4 = I USUALLY DO THIS <u>A LOT</u>

_____1. I try to grow as a person as a result of the experience.
_____2. I turn to work or other substitute activities to take my mind off things.
_____3. I get upset and let my emotions out.
_____4. I try to get advice from someone about what to do.
_____5. I concentrate my effort on doing something about it.
_____6. I say to myself "this isn't real."
_____7. I put my trust in God.
_____8. I laugh about the situation.
_____9. I admit to myself that I couldn't deal with it, and quit trying.
_____10. I restrain myself from doing anything too quickly.

_____11. I discuss my feelings with someone.
_____12. I use alcohol or drugs to make myself feel better.
_____13. I get used to the idea that it happened.
_____14. I talk to someone to find out more about the situation.
_____15. I keep myself from getting distracted by other thoughts or activities.
_____16. I daydream about things other than this.
_____17. I get upset, and am really aware of it.
_____18. I seek God's help.
_____19. I make a plan of action.
_____20. I make jokes about it.
_____21. I accept that this has happened and that it can't be changed.
_____22. I hold off doing anything about it until the situation permits.
_____23. I try to get emotional support from friends or relatives.
_____24. I just give up trying to reach my goal.
_____25. I take additional action to try to get rid of the problem.

_____26. I try to lose myself for awhile by drinking alcohol or taking drugs.
_____27. I refuse to believe that it has happened.
_____28. I let my feelings out.
_____29. I try to see it in a different light, to make it seem more positive.
_____30. I talk to someone who could do something concrete about the problem.
_____31. I sleep more than usual.
_____32. I try to come up with a strategy about what to do.
_____33. I focus on dealing with this problem, and if necessary let other things slide a little.
_____34. I get sympathy and understanding from someone.
_____35. I drink alcohol or take drugs, in order to think about it less.
_____36. I kid around about it.
_____37. I give up the attempt to get what I want.
_____38. I look for something good in what is happening.
_____39. I think about how I might best handle the problem.
_____40. I pretend that it hasn't really happened.
_____41. I make sure not to make matters worse by acting too soon.
_____42. I try hard to prevent other things from interfering with my efforts at dealing with this.
_____43. I go to movies or watch TV, to think about it less.
_____44. I accept the reality of the fact that it happened.
_____45. I ask people who have had similar experiences what they did.

_____46. I feel a lot of emotional distress and find myself expressing those feelings a lot.
_____47. I take direct action to get around the problem.
_____48. I try to find comfort in my religion.
_____49. I force myself to wait for the right time to do something.
_____50. I make fun of the situation.

_____51. I reduce the amount of effort I'm putting into solving the problem.
_____52. I talk to someone about how I feel.
_____53. I use alcohol or drugs to help me get through it.
_____54. I learn to live with it.
_____55. I put aside other activities in order to concentrate on this.

_____56. I think hard about what steps to take.
_____57. I act as though it hasn't even happened.
_____58. I do what has to be done, one step at a time.
_____59. I learn something from the experience.
_____60. I pray more than usual

Author Biography

Alisha Gagnon was born in Bangor, Maine and has lived in both Maine and New Hampshire. She graduated from Kennett High School in Conway, New Hampshire in 2008. She majored in psychology with a minor in German at the University of Maine. She plans to attend graduate school at the University of Maine to obtain her MA in Communication Sciences and Disorders.