Emotion Regulation Strategies, Cognitive Personality Styles, and Context as Predictors of Psychological Outcomes

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Abstract

Emotion regulation (ER) plays a central role in the development and maintenance of a number of clinical disorders including depression. Research shows maladaptive ER strategies to be more strongly associated with symptoms of psychopathology and to be used more consistently across achievement and interpersonal contexts than adaptive ER strategies. This difference related to context might be explained by the cognitive personality style of the individual. The link between ER and well-being has been relatively ignored by researchers even though well-being represents another aspect of mental health. The present study examined the role that cognitive personality styles (sociotropy, autonomy) and ER strategies play in the prediction of psychological health outcomes (depression symptom severity, subjective well-being consisting of positive affect and life satisfaction) in different negative contexts (interpersonal, achievement). Results showed that generally, better psychological health outcomes were associated with lower sociotropy and the use of adaptive as opposed to maladaptive emotion regulation strategies in both negative interpersonal and achievement contexts. The use of adaptive strategies of problem-solving and cognitive reappraisal was linked to lower depression in high sociotropic individuals in both negative interpersonal and achievement contexts. The maladaptive strategy of worry/rumination was linked to more depression in high autonomous individuals in both negative interpersonal and achievement contexts. Experiential avoidance that is conceptualized as a maladaptive strategy appeared serve a useful function in high sociotropic individuals who reported less depression in both negative interpersonal and achievement context. Some context differences were observed. Acceptance and problem-solving predicted lower depression in the interpersonal context but not in the achievement context. Greater use of expressive suppression was linked to greater depression only within the achievement context and not within the interpersonal context.

Worry/rumination predicted poorer subjective well-being (positive affect and life satisfaction) within the interpersonal but not the achievement context. These findings and their implications are discussed with limitations of the study in mind.

Keywords: emotion regulation, cognitive personality styles, context, depression

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INTRODUCTION

Research in the area of emotion dates back to the 20th century in Europe (Matt, 2011) when writer Johan Huizinga first examined emotions in men and women in his 1919 book titled *The Autumn of the Middle Ages.* This was later followed by Norbert Elias in 1939 who investigated the dynamic process of emotion generation and extended the research on emotion by examining the history of change and development in human emotional control. One of the most notable advances in the research area of emotion came from historians at The Annuals School in France who began charting the history of daily life, behaviours, and emotions of previous generations beginning in the 1940's in association with the major historical events that were occurring in society at that time; the project continues to this day (Matt, 2011). This comparative study was significant because it allowed researchers to see how slow gradual changes in human emotions and behaviours had the power to shape the culture and lives of generations.

The Importance of Emotion Regulation

Emotions are associated with instantaneous change in behavioural, motor, and physiological responses (Mauss, Evers, Wilhelm, & Gross, 2006) and can influence decision-making, enhance or suppress memories, and steer interpersonal interactions (Gross & Thompson, 2007). Emotions also have the power to alter one's perception of the environment and therefore may change one's interactions with their environment (Gross & Thompson, 2007). In general, the term emotion refers to any psychological experience with high intensity and high hedonic (i.e., pleasure, displeasure) content (Cabanac, 2002). For instance, emotion can refer to the feeling of guilt that may occur after overreacting in an argument, fear while watching a horror film, or the embarrassment one may feel at a friend's inappropriate behaviour. These examples involve high hedonic content in the form of displeasure. Emotional responses can involve

different systems, including the experiential, behavioral, and neurobiological (Mauss et al., 2006). Most researchers agree that the primary function of emotions is to help humans adapt to their ever-changing environments (Kring & Sloan, 2010). Other researchers suggest that the primary function of emotions is to facilitate human social behaviour such as during early infant-caregiver interactions when infants rely on their expression of emotions to receive nurturance from caregivers (Izard & Ackerman, 2000). As such, emotions can be helpful to the situation. However, problems can arise when emotions are inappropriate, too intense, or experienced for too long for a particular context. Excessive emotionality, defined as uncontrollable behavioral and physiological emotional reactivity, can be extremely distressing for an individual (Reber & Reber, 2001). As well, under-expression of emotion can make engaging in social interactions quite difficult because one's true feelings may not be adequately communicated. Emotion regulation strategies are important to help control such debilitating responses.

Emotion regulation (ER) refers to the process of modulation of emotions in which one or more aspects of the emotional response (i.e., experiential, behavioral, neurobiological) is minimized, maintained, or magnified (Kring & Sloan, 2010). ER involves an individual's awareness and ability to change the course of the emotional trajectory (Nolen-Hoeksema, 2012) and plays a central role in the development and maintenance of a number of clinical disorders such as anorexia nervosa, bulimia nervosa, Alzheimer's disease, attention deficit hyperactivity disorder, borderline personality disorder, alcohol abuse, anxiety, and depressive disorders (Aldao, Nolen-Hoeksema, & Schweizer, 2010). Therefore, research on ER is important because it has implications for furthering our understanding of psychopathology.

History of Emotion Regulation Research

Precursors to contemporary ER research include aspects from early psychoanalytic theory (Gaensbauer, 1982). Sigmund Freud theorized that emotion regulation was strictly an unconscious process (Erdelyi, 1993) and that the unconscious mind employs ego defense mechanisms to protect the psyche from situational distress (Gross, 1998). Ego defense mechanisms such as denial, rationalization, and displacement (Plutchik, Kellerman, & Conte, 1979) to name a few, are used to distort reality in order to ameliorate the experience of negative emotion (Paulhus, Fridhandler, & Hayes, 1997). Freud believed that each individual has a unique set of ego defense mechanisms to modulate emotion. Many of the Freudian concepts can be found woven in present day ER research. For example, the Freudian ego defense mechanism expressive suppression is now widely supported as an important ER strategy.

There are a few major differences between Freud's theory on ER and contemporary research on ER. While psychoanalytic theory placed a heavy emphasis on the individual's ability to regulate emotion, contemporary research now puts added emphasis on the level of distress the situation elicits (Mayer & Salovey, 1995). That is, contemporary research acknowledges that both the individual and the situation are important components in the ER process. Furthermore, Freud believed that ER involved only unconscious processes, while contemporary ER research posits that both unconscious processes and consciousness are involved (Mayer & Salovey, 1995).

The second important precursor to contemporary ER research was the development of stress and coping theories (Gross, 1998) from which many of the ER methodological approaches are borrowed. For example, ER studies often measure emotional response to psychological challenges such as public speaking or exam writing, much like early stress and coping studies (Gross, 1998). Furthermore, stress and coping theories and ER theories often examine similar

constructs such as emotional distress (Gross, 1998). This overlap allows ER research to build upon past findings from stress and coping research. However, stress and coping theories and ER theories differ in a two important aspects. Stress and coping strategies aim to regulate negative emotions while ER strategies involve the regulation of both negative and positive emotions. Furthermore, stress and coping literature often focuses solely on the individual in relation to emotion, while ER research acknowledges the interaction between the individual and environment and its implications for emotion (Gross, 1998). Within the past two decades, the field of ER has emerged as an independent research domain. Models of ER have been proposed and tested; yet there is still much to be known about ER and its impact on human functioning. In the following sections, the research on ER in relation to psychological functioning will be reviewed, with a focus on cognitive personality styles and context that might influence the mental health outcome of using specific ER strategies in different situations. Descriptions will therefore be provided of prominent emotion regulation models, characterization of emotion regulation strategies including adaptive and maladaptive strategies, associations between emotion regulation and psychological outcomes, the influence of context on the implementation of emotion regulation strategies, and finally, the link between emotion regulation and cognitive personality styles.

Emotion Regulation Models

There is a strong debate amongst researchers as to whether processes that govern emotions are different from the processes governing ER. Some researchers suggest that emotion and ER have separate underlying mechanisms because they believe that not all emotions are regulated (Kring & Werner, 2004). For example, individuals with major depressive disorder may continue to experience depressive symptoms despite adequate ER efforts. In contrast, there are

other researchers who believe that all emotions are regulated to some extent and thus, emotions and emotion regulation processes cannot be considered separately from each other. Nevertheless, to understand emotion regulation one must first understand the origination of emotions.

The mechanism whereby the human body generates emotions has been under dispute for many years. Some early theories on emotion generation include the James-Lange theory (James, 1884), the Cannon-Bard theory (Cannon, 1927), and the Schachter-Singer theory (1962). The James-Lange theory posited that a stimulus triggers the development of differential patterns of physiological arousal that are transmitted to the brain and determines the subsequent emotion that the person experiences (James, 1884). Thus, this theory suggested physiological change to be primary and the experience of emotion to be secondary. James and Lange would also go on to suggest that if physiological arousal were to be removed then the individual would not experience any emotion (James, 1884). In contrast, Cannon and Bard posited that the experience of emotions and physiological arousal might occur simultaneously but are independent from each other. According to them, the thalamic neurons that fire in a specific pattern in the presence of an environmental stimulus, and that in turn produces the experience of emotions, can also activate the nearby sensory path and innervate muscles and viscera and produce the physiological arousal. Thus, the physiological arousal is independent from and does not necessarily precede the experience of emotion (Cannon, 1927). For example, a person in a fearful situation may feel his or her pulse quickening and begin to sweat while simultaneously experiencing the emotion of fear - the physiological arousal and emotion originate from the same physiological process but are not causally linked to each other. Many years later, Schachter and Singer (1962) proposed another theory of emotion generation. They posited that emotion is elicited when a person

interprets the meaning of a physiological response based on contextual cues. For example, a person crying at a funeral may interpret the tears as an expression of sadness, but interpret the same as an expression of happiness when meeting up with a long-awaited friend. These early theories have been partially supported by experimental studies (Damasio, 1994; James, 1894); however, contemporary research tends to point towards more complex models of emotion generation.

The process model of emotion generation (Gross, 1998) is perhaps the most widely used contemporary model for describing how emotions are generated (Webb, Miles, & Sheeran, 2012). Unlike the early theories presented above, which had focused solely on emotion generation, the process model gives consideration to ER strategies and delineates how these strategies might be intertwined throughout the emotion generation process. According to this model, the emotion generation process is first initiated by the presence of either an internal (i.e., anticipating a breakup from a relationship) or external (i.e., watching a car accident) cue. This cue triggers response tendencies, which refers to changes in experiential, behavioural, or physiological systems (Mauss, Levenson, McCarter, Wilhelm, & Gross, 2005). An example of a response tendency is the feeling of slight anxious uneasiness after an anxiety-provoking event such as a big job interview. The emotional response tendency then triggers and shapes the resulting emotional response (Gross, 1998). This description of emotion generation is in line with the early theory of emotion proposed by William James and Carl Lange (James, 1894) which had suggested that physiological arousal leads to emotion.

According to Gross (1998), ER strategies are highly intertwined with the emotion generation process. His model describes five sets of emotion regulatory acts that have their impact at different points in the emotion generation process. The first four precede the

generation of the emotion while the fifth occurs after emotion generation. The first emotion regulatory act called situation selection involves either approaching or avoiding places, people, or objects. For example, a socially anxious individual might avoid social situations in anticipation of anxiety that would be elicited by such situations. The second act is called situation modification, in which the individual engages in active efforts to change the situation that he or she is in. For instance, a person who is kept awake at night by a loud party that is being held in the next apartment unit might go next door and request that the noise be turned down. The third set attentional deployment, involves individuals directing their attention towards or away from certain aspects of a situation to regulate their emotions. Hence, some individuals may deal with an emotionally-arousing situation by ruminating or over-thinking the situation, while others may focus their attention elsewhere and ignore the situation and its consequences. The fourth set of emotion regulatory acts is cognitive change that occurs after the emotion-eliciting situation has been selected, modified, and attended to. The individual reappraises the situation to modify its emotional impact, e.g., using downward social comparison to show that one's situation is not as bad as others who are less fortunate. Lastly, the fifth set of emotion regulatory act called response modulation takes place after response tendencies have been expressed and is used to directly modify the physiological, experiential, or behavioural responses. Some common examples include the use of drugs and alcohol, physical exercise, and relaxation techniques. The process model is a very well regarded model of emotion generation (Webb et al., 2012) and has been used as a framework to develop classification systems (see Koole, 2009; Parkinson & Totterdell, 1999) and to inform theoretical perspectives on ER strategies (i.e., worry/rumination) (Webb et al., 2012).

More recently, Larsen's (2000) control model of mood regulation that assumes all individuals act in ways to directly control their mood has gained some attention in the literature. The theory posits that each individual has a unique desired subjective state or set point that he or she would like to maintain. Difficulties arise when there is a discrepancy between the desired set point and the actual subjective state. Therefore, individuals use ER strategies or behaviours to eliminate the discrepancy or dissonance between the desired set point and actual subjective state. For example, an individual's ideal set point might be a feeling of calm and happiness. However in moments of anger or arousal, he or she may use ER strategies, such as cognitive reappraisal of the anger-provoking situation, to decrease arousal and anger in order to return to the desired set point of calm and happiness. Researchers suggest that an individual's unique desired set-point is shaped by one's personality and motivation to achieve rewards and avoid threats (Kämpfe & Mitte, 2009). Larsen (2000) also posits that some individuals may be hypersensitive to negative situations compared to others and therefore, may have more difficulty regulating their emotions. Relatively few studies have addressed Larsen's (2000) model of mood regulation. One study by Kämpfe and Mitte (2009) found support for the model and reported that individuals who experience a discrepancy between the desired set point and the actual subjective state strive to eliminate the discrepancy by using emotion regulation strategies. Furthermore, the researchers found that individuals with a larger discrepancy between desired set point and actual affect tended to be more neurotic and report lower levels of life satisfaction than those with a relatively smaller discrepancy between desired set point and actual affect. More research is needed to corroborate Kämpfe and Mitte's (2009) findings.

Emotion Regulation Strategies

The most widely studied ER strategies in the emotion literature are problem solving,

cognitive reappraisal, acceptance, expressive suppression, experiential avoidance, and worry/rumination (Aldao et al., 2010). It is generally accepted that the strategies can be categorized into adaptive or maladaptive types based on their association with health outcomes, interpersonal and academic relationships, and work performance (John & Gross, 2004) implying the significance of context. It has been suggested that an inability to use adaptive strategies effectively to deal with negative events may result in the experience of more severe negative emotions, which can develop into psychopathology (Mennin, Heimberg, Turk, & Fresco, 2005; Gross & John, 2003). Conversely, the effectiveness in the use of adaptive strategies is posited to result in increased well-being (Gross & John, 2003; Aryee, Luk, Leung, & Lo, 1999).

Adaptive Emotion Regulation Strategies

According to Aldao and colleagues (2010), three putatively used adaptive ER strategies are problem-solving, cognitive reappraisal, and acceptance. Problem-solving consists of a person's attempt to change or contain the consequences of a negative circumstance and can be implemented to deal with both present and potential stressors (Aldao et al., 2010). Cognitive reappraisal, involves reframing a negative situation by interpreting it in a positive or benign manner (Gross, 1998). Acceptance involves welcoming the thoughts, feelings, and sensations related to a situation in a non-judgmental way (Kabat-Zinn, 1990). It is important to note that depending on the context adaptive strategies may not always be adaptive. For example, a bereaved family may not find the ER strategy problem-solving to be adaptive during the mourning process. If a person tried to problem-solve as to why their loved one passed away, this may cause greater distress or frustration and therefore, problem-solving would serve as a maladaptive strategy in this context. However, to maintain consistency in terminology with previous studies in the areas of emotion regulation, the present study will categorize problem-

solving, cognitive reappraisal, and acceptance as adaptive strategies.

Aldao et al (2010) carried out a meta-analysis of 114 studies to investigate the link between problem-solving, cognitive reappraisal, and acceptance with psychopathology (i.e., collapsing across depression, anxiety, eating, and substance-related symptoms). They found medium to large effect sizes for problem-solving and small to medium effect sizes for cognitive reappraisal and acceptance, suggesting that participants who utilized problem-solving were less likely to report psychopathology. However, the association between the adaptive ER strategies and psychopathology was weak and inconsistent across studies, and the relationship between psychopathology and acceptance was often found to be non-significant (Aldao et al., 2010). These findings are surprising considering that adaptive ER strategies are an integral component of many treatment and prevention efforts. For instance, cognitive-behavioural therapies involve teaching cognitive reappraisal skills, which often are used to mitigate depression and anxiety symptoms (Beck, Rush, Shaw, & Emery, 1979). Furthermore, mindfulness-based cognitive therapy (MBCT) involves the adaptive strategy of acceptance of emotions as a component for treating a variety of disorders, including depression (Segal, Williams, & Teasdale, 2002) and anxiety disorders (Roemer, Orsillo, & Salters-Pedneault, 2008). Therefore, despite the weak link between adaptive emotion regulation strategies (i.e., problem-solving, cognitive reappraisal, acceptance) with psychopathology, these adaptive strategies are often used to treat psychological disorders (Heffner, Eifert, Parker, Hernandez, & Sperry, 2003).

It should be noted that there are limitations to Aldao et al. (2010) meta-analysis that may contribute to this surprising finding. For instance, the differences among measurement tools that were used to assess adaptive ER strategies and psychopathology may in part explain the weak relationship between the two constructs. For example, the ER strategy of problem-solving may

be measured with the Brief Cope Inventory (Carver, 1997) in one study and with the Proactive Coping Inventory (Greenglass, Schwarzer, & Taubert, 1999) in another. Combining results from studies that have employed different measurement tools to measure the same adaptive ER strategy may distort the actual relationship between adaptive strategies and psychopathology. As well, the types of psychopathology and their measurement, and the type of samples might vary across studies and account for the weak findings in the meta-analysis. It is possible that adaptive ER strategies might bear a stronger relation to key aspects of well-being (e.g., one's sense of environmental mastery, personal growth, and purpose in life) than to psychopathology. A better understanding of how certain adaptive strategies may promote well-being and decrease symptoms associated with psychopathology is necessary to help clients to use these strategies effectively.

Problem-solving, an important ER strategy, is said to serve an adaptive function because it enables an individual to modify or eliminate potential stressors. Poor problem-solving skills have been found to be a risk factor for depression (D'Zurilla, Chang, Nottingham, & Faccinni, 1998). A study by Billings and Moos (1984) found problem-solving to be associated with less severe dysfunction in one's daily life among patients with depression. Nolen-Hoeksema, Morrow, and Fredrickson (1993) found the use of certain maladaptive strategies to be associated with depressive symptomology as well as a limited use of problem-solving. Recent studies have begun to assess the link between problem-solving and positive outcomes. For example, a study by Joiner et al (2001) found problem-solving to be correlated with positive affect in a sample of individuals with suicidal symptoms. Another correlational study found that individuals with flexible problem-solving skills needed less cognitive resources to maintain or regain emotional well-being compared to those who do not engage in problem-solving (Blanchard-Fields, 2009).

Cognitive reappraisal, another important ER strategy, is often employed before the emotional response is fully experienced; therefore, it has the potential to change the subsequent emotion trajectory (Gross & John, 2003). Cognitive reappraisal may elicit a down-regulation of negative emotion and indirectly reduce both psychological distress and behavioural components related to negative emotion. Ineffective cognitive reappraisal skills have been found to be core contributors to the development of depressive symptoms (Salkovskis, 1998). A study by Garnefski, Legerstee, Kraaij, Kommer, and Teerds (2002) found cognitive reappraisal to play a significant role in predicting symptoms of psychopathology for both adolescents and adults. Furthermore, cognitive reappraisal has been found to be associated with greater levels of psychological health as measured by indices of well-being, social adjustment, and depressive symptoms (Hopp, Troy, & Moss, 2011). A study by Gross and John (2003) suggests that individuals who use cognitive reappraisal tend to experience more positive emotions and less negative emotions than individuals who suppress their emotions. Cognitive reappraisal has also been found to be associated with optimism (Scheier, Weintraub, & Carver, 1986) and to buffer against the long-term effects of negative life experiences (Diener, Lucas, & Scollon, 2006).

The use of the adaptive ER strategy acceptance has been found to reduce emotional arousal which in turn has been associated with a reduction in overall suffering (Hayes, Strosahl, & Wilson, 1999). Some theorists suggest that acceptance is used to counteract maladaptive strategies such as experiential avoidance (Gratz & Gunderson, 2006). In general, treatment outcome research supports the use of the ER strategy acceptance in the treatment of individuals with depressive symptoms (Liverant, Brown, Barlow, & Roemer, 2008). Acceptance has also shown to be effective in treatment of panic disorder in that it is associated with less fear, catastrophic thoughts, and avoidance behaviours (Levitt, Brown, Orsillo, & Barlow, 2004). In

terms of the link between acceptance and well-being, research has found those individuals who engage in both acceptance and cognitive reappraisal tend to exhibit greater levels of happiness and positive emotions (North, Pai, Hixon, & Holahan, 2011). Furthermore, a study by Shapiro Carlson, Astin, and Freedman (2006) suggest that higher levels of acceptance appear to be a precursor of psychological flexibility. Psychological flexibility refers to one's ability to direct mental resources efficiently to deal with fluctuating situational demands and is deemed to be an important component for the maintenance of well-being (Kashdan & Rottenberg, 2010). Studies have consistently shown problem-solving, cognitive reappraisal, and acceptance to be associated with positive outcomes such as positive affect and well-being (Aldao et al., 2010).

Maladaptive Emotion Regulation Strategies

Maladaptive ER strategies are strategies that are used in efforts to cope with negative situations, however they are not flexible enough to deal with the demands of the changing environment and therefore promote dysregulation (Bridges, Denham, & Ganiban, 2004). According to Aldao and colleagues (2010), the prominent maladaptive strategies in the ER literature include expressive suppression, experiential avoidance, worry/rumination, and self-criticism. Expressive suppression involves hiding one's feelings and thoughts from others. However, they may be aware of the thoughts and feelings within themselves. Chronic engagement in expressive suppression may disrupt natural habituation to emotional stimuli that results in a hypersensitivity to depressive thoughts and symptoms (Wenzlaff & Wegner, 2000). It has been linked to reduced sense of well-being, reduced life satisfaction (Gross & John, 2007), reduced positive affect (Campbell-Sills, Barlow, Brown, & Hofmann, 2006), maintenance of obsessions (Salkovskis, Richards, & Forester, 1995), and anxiety (Becker, Rinck, Roth, & Margraf, 1998), and to the development of post-traumatic stress disorder in motor vehicle

accident victims three months post-incident (Ehlers, Mayou, Bryant, 1998).

The use of experiential avoidance (i.e., pushing down feelings or putting them out of mind) has been found to paradoxically increase the accessibility of unwanted thoughts (Wenzlaff & Wegner, 2000). Experiential avoidance has demonstrated associations with poor psychological and physical health outcomes (John & Gross, 2003). For instance, a study by Blalock and Joiner (2000) found that negative events predicted depressive symptoms among college women who engaged in experiential avoidance. Furthermore, in both clinical and nonclinical populations, experiential avoidance is correlated with symptoms of anxiety (Forsyth, Parker, & Finlay, 2003). Another study found the use of experiential avoidance to predict distress among mothers whose children have been sexually abused (Hiebert-Murphy, 1998). Experiential avoidance has also been found to be associated with a poorer ability to adapt (Holahan & Moos, 1985). Thus, it seems that the ER strategy experiential avoidance may impede an individual's ability to process the negative event in order to relieve negative emotions associated with the event.

Worry/rumination, which involves dwelling on negative feelings and the situation that produces those feelings, is perhaps the most widely studied maladaptive ER strategy. Studies show that individuals who ruminate do so because they believe this strategy will help solve their problems (Papageorgiou & Wells, 2003) but it tends to have the opposite effect. In the context of distress, worry/rumination interferes with good problem-solving and motivation levels (Lyubomirsky & Tkach, 2004; Nolen-Hoeksema et al., 2008). High levels of worry/rumination have been associated with prolonged depressive symptoms (Nolen-Hoeksema et al., 1993) and with lower life-satisfaction (Quoidbach, Berry, Hansenne & Mikolajczak, 2010). The use of worry/rumination has been found to make life more difficult for individuals, hurt their

relationships, and contribute to the development and maintenance of disorders such as alcohol abuse (Nolen-Hoeksema, 2003). Worry/rumination has also been found to exacerbate dysphoric mood (Broderick, 2005). Findings gathered by Silk, Steinberg, and Morris (2003) suggested that adolescents who ruminate were less effective in regulating negative affect and displayed higher levels of depressive symptoms, problem behaviour (e.g., arguing, stealing, destroying property), anger and sadness. A longitudinal study by Nolen-Hoeksema, Parker, and Larsen, (1994) found bereaved individuals who ruminated were at a higher likelihood of developing a pessimistic outlook one month after the loss, which was in turn associated with higher levels of depressive symptoms at six months. Worry/rumination has been found to be negatively associated with subjective well-being (Elliot & Coker, 2008). These results suggest worry/rumination to be detrimental for adolescents and adults.

Self-criticism has also been characterized as a maladaptive ER strategy in the literature yet there is very little research on it. Self-criticism is often referred to as harsh denigration of one's self for the experience of negative feelings (Aldao & Nolen-Hoeksema, 2012). Research suggests that among individuals who are depressed, the distress is often followed by the use of self-criticism or guilt about unhappy feelings (Alloy & Abramson, 1988). A study by Aldao and Nolen-Hoeksema (2012) found self-criticism to be a significant positive predictor of psychopathology. The study also suggested self-criticism to be implemented to a lesser extent across achievement and interpersonal situations than the ER strategies of acceptance, cognitive reappraisal, problem-solving, worry/rumination, suppression of experiences (i.e., experiential avoidance), and hiding expressions (i.e., expressive suppression). This particular study suggests that even minimal use of the ER strategy self-criticism may have significant implications on one's psychological health.

Association of Emotion Regulation with Depression

Difficulty in ER is a common occurrence among those with psychiatric disorders (Gross, 1998). Certain conditions such as borderline personality disorder, posttraumatic stress disorder, and many of the anxiety disorders are postulated to be linked to emotion underregulation (Kring & Sloan, 2010). These individuals often experience such intense emotions that they find it difficult to regulate their emotions. In contrast, obsessive-compulsive personality disorder usually is associated with an overregulation of emotion (Kring & Sloan, 2010). Bipolar disorder has been linked to emotion dysregulation (Kring & Sloan, 2010). In fact, many of the diagnostic categories of psychopathology listed in the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV-TR; American Psychiatric Association, 2000) are related to problems in either emotion or ER (Aldao et al., 2010). For example, many mood and anxiety disorders are defined primarily by disruptions in emotional response (Mineka & Sutton, 1992).

Of key interest to the present project is the relationship between ER strategies and depression. Clinical depression can be conceptualized as period of depressed mood and/or the loss of interest or pleasure in nearly all activities that lasts at least two weeks, and that is accompanied by a combination of other symptoms such as changes in appetite or weight, sleep, feelings of worthlessness, suicidal ideation, or decreased energy (DSM-IV-TR; American Psychiatric Association, 2000). This disorder is more often linked to ER difficulties than other clinical disorders such as substance abuse and eating disorders (Aldao et al., 2010), and is twice as common among women as in men (DSM-IV-TR; American Psychiatric Association, 2000). Interestingly, the sex differences in the rates of depression seem to emerge in adolescence (DSM-IV-TR; American Psychiatric Association, 2000), the same developmental stage where ER strategies begin to emerge (Rawana, Flett, Nguyen, Norwood, & McPhie, 2011). This similarity

in emergence pattern suggests that the relationship between ER strategies and depressive symptoms may exist as early as adolescence continuing onto adulthood. It is important to note that while research suggests there is an established a link between ER and depression, one must consider the variations that exist in measurement tools used to assess both ER strategies and outcome (i.e., depressive symptoms, well-being) among studies. Such a variation in methodologies may create inconsistency in results and affect the findings of meta-analytic studies.

Association of Emotion Regulation with Subjective Well-Being

Much of the ER literature has focused on its link with psychopathology, particularly depression. However, there is a growing movement towards the study of ER in relation to positive aspects of functioning such as well-being. Contemporary research assesses well-being in a variety of ways such as by measuring one's level of life satisfaction, happiness, psychological health, and positive affect (Mitmansgruber, Beck, Hofer, & Schubler, 2009). Most research has focused on the assessment of subjective well-being (Diener & Lucas, 1999) which encompasses the concepts of life satisfaction and positive affect (Diener, 1984; Diener, Emmons, Larsen, & Griffen, 1985).

Subjective well-being (SWB) refers to a high level of positive affect, low level of negative affect, and a high life-satisfaction (Diener, 1984; Diener et al., 1985). Positive affect reflects a level of pleasurable interactions with one's environment such as the experience of happiness, joy, enthusiasm, and contentment (Clark, Watson, & Leeka, 1989). In contrast, negative affect generally refers to unpleasurable engagement with one's environment that results in feelings of anger, contempt, fear, and guilt, to name a few (Tellegen, 1985). Negative affect is an independent construct from positive affect (Warr, Barter, & Brownbridge, 1983) such that

one's level of negative affect may not have bearing on one's level of positive affect. Life satisfaction, another component of subjective well-being, typically involves one's perceived happiness with life and desire to change the past, present, or future.

Judgments of one's overall level of subjective well-being have been found to be based more on the frequency of previous positive experiences than on the intensity of past positive experiences (Diener, Sandvik, Pavot, & Gallagher, 1991). Previous findings suggest subjective well-being, in particular positive affect, to serve as a buffer against adverse physiological consequences of stress (Fredrickson & Levenson, 1998). Thus, from a health perspective, it seems advantageous for an individual to have high levels of subjective well-being; however, it is not known which ER strategies best predict high levels of subjective well-being.

Previous research examining the link between adaptive ER strategies and well-being has found both problem-solving and cognitive reappraisal to be related to less deterioration in health and well-being over one year among first year medical students (Park & Adler, 2003). This particular study assessed well-being by measuring how difficult it was for students to experience positive states of mind (e.g., focused attention or restful repose). Another study found the adaptive strategy cognitive reappraisal to be positively associated with aspects of well-being such as life-satisfaction, environmental mastery, personal growth, self-acceptance, and a clearer purpose in life whereas expressive suppression was negatively associated with each of these aspects of well-being (Gross & John, 2003). Research has also suggested problem-solving to be positively associated with three aspects of well-being that is, life satisfaction, job satisfaction, and family satisfaction (Aryee et al., 1999). With regards to the link between maladaptive ER strategies and well-being, research has found expressive suppression to be associated with lower subjective well-being (DeNeve & Cooper, 1998). Studies have also found the use of the

maladaptive ER strategy experiential avoidance to be linked to lower levels of subjective well-being (Mitmansgruber et al., 2009). Likewise, worrying/ruminating about one's aspirations has been associated with decreased subjective well-being and negative affect (Elliot, Sheldon, & Church, 1997). Studies have also suggested self-criticism to be associated with various negative outcomes such as impaired functioning, lower life-satisfaction, and decreased well-being (Powers, Koestner, Zuroff, Milyavskaya, & Gorin, 2011). Based on these previous findings it is evident that the effective use of ER strategies is not only associated with decreased psychopathology but also has relevance to one's level of well-being.

Distinction Between Subjective Well-being and Psychopathology

Researchers have questioned whether well-being and psychopathology (i.e., depression) represent opposite ends of the same continuum or are completely distinct aspects of psychological functioning. If well-being and psychopathology are on the same continuum, then it is logical to assume that current interventions aimed at decreasing psychopathology may also serve to increase well-being (Ryff et al., 2006). However, if well-being and psychopathology are distinct aspects of functioning, then interventions for depression may not have bearing on healthy well-being. In general, contemporary studies have supported the notion that well-being and psychopathology are separate constructs such that an absence of psychopathology does not necessarily indicate the presence of well-being (Ryff et al., 2006; Ryff & Singer, 1998). Thus, it seems possible for an individual to have no depressive symptoms and simultaneously report low levels of well-being. A recent study by Ryff and colleagues (2006) found well-being to be associated with different biological markers than psychopathology. The seven biomarkers (cortisol, DHEA-S, Norepinephrine, HDL cholesterol, total/ HDL cholesterol, systolic blood pressure, and waist-hip ratio) were correlated with both psychological and subjective well-being

but not with psychopathology. Furthermore, researchers have found well-being and psychopathology to be associated with activation in distinct areas in the brain (Urry et al., 2004). Together these findings suggest that the mechanisms related to well-being may be quite distinct than mechanisms underlying psychopathology. Therefore, in addition to studying indices of psychopathology, it is also important for researchers to also assess well-being because they each uniquely contribute to one's healthy functioning.

Influence of Context on the Implementation of Emotion Regulation Strategies

Preliminary studies suggest that the context in which ER strategies are implemented may influence the effectiveness of the strategies in decreasing psychopathology (Aldao & Nolen-Hoeksema, 2012; Aldao et al., 2010). One's ability to flexibly apply ER strategies to different contexts appears to involve individual differences in cognitive processes and emotional intelligence (Mayer, Salovey, & Caruso, 2008). Aldao and Nolen-Hoeksema (2012) assessed the influence of context in the implementation of ER strategies to deal with negative events. The researchers asked participants to describe emotion-eliciting situations or contexts in their lives and to then identify which ER strategies they had used to regulate their emotions during these situations. The situations were either social or achievement-related that elicited four emotion types (anxiety, anger, sadness, happiness) of low, moderate or high intensity. Both maladaptive strategies and adaptive strategies were assessed in the study. The findings suggest that implementation of maladaptive strategies, especially worry/rumination and self-criticism, predicted psychopathology. Moreover, maladaptive strategies were implemented with less cross-situational variability than adaptive strategies, i.e., maladaptive strategies were used across different situations while adaptive strategies were used only in certain situations but not in others. These distinct patterns of implementation may partially account for the strong link between

maladaptive strategies and psychopathology because the consistent use of maladaptive strategies across achievement and interpersonal contexts may lead to distress in both domains and this distress may be less affected by the use of adaptive strategies because of their susceptibility to contextual-demands. This study gives evidence to the importance of context in the implementation of ER strategies.

The study by Aldao and Nolen-Hoeksema (2012) had several limitations. Participants were asked to recall stressful interpersonal and academic events and associated emotions from their own experience in order to rate their use of the different ER strategies during those personal situations. As it is widely recognized, recall data is subjected to errors of omission or commission. As well, the researchers noted that their participants had a propensity to recall events in which they were satisfied with the outcome, suggesting a bias towards identifying situations in which the emotion regulation strategies produced favourable outcomes. Another complicating factor was that the participants identified the use of more than one ER strategy in each event, which led to the difficulty in ascertaining the temporal sequence of the strategies and their causal link to the subsequent reported emotions. As well, the study examined ER strategies in relation to psychopathology, and not well-being. Well-being is an important construct to examine alongside of psychopathology because it offers additional information on the individual's overall health. Despite the limitations, the study by Aldao and Nolen-Hoeksema represents an important development in the area of ER because it acknowledges the influence of context on the implementation of ER strategies. However, when one examines the specificity of context (interpersonal and achievement) as Aldao and Nolen-Hoeksema have done, it is essential to factor in the cognitive personality style of the individual.

Association of Emotion Regulation with Cognitive Personality Styles

In general, cognitive personality styles refer to distinctive ways in which individuals perceive their environment (Beck, 1983). According to Beck's (1983) diathesis-stress formulation of depression an individual's cognitive personality style may serve as a vulnerability for depression. Beck proposed two principal cognitive personality subtypes, called sociotropy and autonomy (Beck, 1983). Individuals high in sociotropy show greater investment in interpersonal relationships while autonomous individuals tend to value achievement and independence. Furthermore, studies suggest that sociotropy often reflects dependency, concern about disapproval, and a strong need for social acceptance, while autonomy is often associated with individual achievement, perfectionism and self-criticism, freedom from control, and preference for solitude (Moos & Holohan, 2003).

Studies suggest sociotropy and autonomy to be distinct constructs (Zuroff, Mongrain, & Santor, 2004). A confirmatory factor analysis by Bagby, Parker, Joffe, Schuller, and Gilchrist (1998) revealed a distinction between autonomy and sociotropy among both depressed and nonclinical populations. A more recent study (Hong, Malik, & Lee, 2003) with a Korean undergraduate population confirmed Bagby and colleagues' (1998) results suggest that the distinction between sociotropy and autonomy may hold across culture. Some theorists have even posited that sociotropy and autonomy may differ in their relation to specific depressive symptomology (see reviews by Coyne & Whiffen, 1995; Robins, 1995). Although research has indicated sociotropy and autonomy to be two separate constructs, it is quite possible for an individual to display a mixture of the two traits (Beck, 1983).

Beck and colleagues (Beck, Epstein, & Harrison, 1983) predicted individuals high in sociotropy to be particularly vulnerable in events that have a social component because these

individuals find interpersonal rejection, loss, or conflict more distressing than nonsociotropic individuals. Beck's prediction has been supported by research. For instance, a meta-analytic review found evidence for the interaction of sociotropy and negative social events in predicting depression (Nietzel & Harris, 1990). Sociotropic individuals have been found to have a higher likelihood of developing depressive symptoms in negative social situations than individuals who are low in sociotropy (Dozois & Back-Dermott, 2000). In contrast, autonomous individuals often put emphasis on meeting personal goals and demands and if they are thwarted whilst pursuing their goals they often become self-critical. Thus high autonomous individuals may be more likely than low autonomous individuals to become distressed and develop depressive symptoms if they do not meet their self-directed goals (Coyne & Whiffen, 1995). Both sociotropy and autonomy have been found to be associated with increased vulnerability to depression within an interpersonal- or achievement-related situation, respectively (Hong et al., 2003).

It is not known whether one's level of autonomy and/or sociotropy may have an association with one's implementation of different ER strategies in negative achievement and interpersonal contexts. Larsen (2000) suggested that some individuals may be more sensitive to negative situations than others and consequently, may have more difficulty regulating their emotions. Following this line of argument, it is plausible that high sociotropic individuals who are more sensitive to negative social situations than low sociotropic individuals might have greater difficulty in engaging in effective ER strategies in those contexts. A similar argument could be made for negative achievement situations and high autonomous individuals where they find it more challenging to engage in adaptive ER strategies than low autonomous individuals when faced with performance failure.

Few studies have been conducted on the association between cognitive personality styles and the implementation of specific ER strategies. A study by Conner-Smith and Compas (2002) found that high sociotropic individuals were more likely to rely on experiential avoidance strategies than low sociotropic individuals, and that the use of experiential avoidance was associated with higher levels of depression. It is important to note that this particular study focused on sociotropy, autonomy, and the implementation of ER strategies only within the context of negative interpersonal events and not negative achievement-related events, which would have more relevance for autonomous individuals. Furthermore, Conner-Smith and Compas did not assess the specific ER strategies of expressive suppression or worry/rumination. This is surprising, as both expressive suppression and worry/rumination play an important role in the development and maintenance of depression. For example, researchers have found high rates of expressive suppression among both individuals who are depressed and those who are at risk for developing depression (Wegner & Zanakos, 1994; Wenzlaff, Rude, Taylor, Stultz, & Sweatt, 2001). As well, studies have shown that those who engage in worry/rumination are at a greater likelihood of developing depression compared to people who do not worry/ruminate (Kuehner & Weber, 1999). Therefore, it is important for studies to include both expressive suppression and worry/rumination when examining the relationship between ER strategies, cognitive personality styles, depression, and well-being.

General Summary

ER plays a central role in the development and maintenance of a number of clinical disorders including depression (Salkovskis, 1998). Maladaptive ER strategies show a stronger association with symptoms of psychopathology than adaptive ER strategies, suggesting that reducing the use of maladaptive ER strategies may be more effective in decreasing symptoms of

depression than increasing use of adaptive ER strategies (Aldao et al., 2010). Maladaptive ER strategies are used more consistently across achievement and interpersonal contexts whereas adaptive ER strategies appear to be implemented with greater cross-context variability (Aldao & Nolen-Hoeksema, 2012). The implementation of ER strategies across contexts might be influenced by the cognitive personality style of the individual. High sociotropic individuals are more sensitive to interpersonal failures than low sociotropic individuals (Beck et al., 1983) and might have more difficulty using adaptive ER strategies when faced with interpersonal problems, which in turn might increase their distress and increase the risk of their developing depressive symptoms. The same argument could be made for high autonomous individuals in negative achievement contexts. Thus the use of maladaptive ER strategies might lead to depressive symptoms only when used in certain contexts by individuals with particular cognitive personality styles. The link between ER and well-being has been relatively ignored even though well-being represents another aspect of mental health.

The Present Study

The present study examined the role that cognitive personality styles (sociotropy, autonomy) and ER strategies play in the prediction of psychological health outcomes (depression symptom severity, subjective well-being consisting of positive affect and life satisfaction) in different negative contexts (interpersonal, achievement). As in the Aldao and Nolen-Hoeksema (2012) study, both adaptive and maladaptive ER strategies were examined. The three adaptive ER strategies were acceptance, problem-solving, and cognitive reappraisal. The four maladaptive ER strategies were self-criticism, expressive suppression (i.e., hiding feelings), experiential avoidance, and worry/rumination. The distinction between expressive suppression and experiential avoidance is that expressive suppression involves avoiding the outward

expression of the emotions that are experienced whereas experiential avoidance involves avoiding the experience of the emotions altogether.

Hypotheses

It was expected that in a negative interpersonal context, high sociotropy and use of maladaptive ER strategies would jointly predict high depression symptom severity and low subjective well-being. As well, it was expected that in the negative achievement context, high autonomy and use of maladaptive ER strategies would jointly predict high depression symptom severity and low subjective well-being.

METHOD

Sample

A total of 313 (64 men, 249 women) of age 18 or older were recruited from Lakehead University and the Thunder Bay general community. As can be seen from Table 1, the mean age of the sample was 23.33 years (SD = 9.20), with the mean age of women being 23.08 years (SD = 8.92) and of men being 24.39 years (SD = 10.29). Within the sample, 294 participants (93.93%) identified themselves as students, 21 (8.71%) participants self-identified as of Aboriginal decent, five (1.60%) self-identified as Asian, four (1.28%) self-identified as Latino, 276 (88.18%) self-identified as Caucasian and two (0.64%) participants did not specify their ethnicity. Sixteen participants (5.11%) self-reported that they are currently diagnosed with depression, 16 (5.11%) with anxiety, two (0.64%) with bipolar, and nine (2.88%) with other diagnoses such as Attention Deficit Hyperactivity Disorder, Anorexia Nervosa, and Dyssomnia. Therefore, 270 participants (86.26%) were nonclinical. With respect to cognitive personality styles, participants reported having sociotropic (M = 57.91, SD = 19.69) and autonomous (M = 58.68, SD = 13.76) characteristics to the same degree, $t(312) = -.65$, ns.

Materials

Research Questionnaire (see Appendix A)

Section A. Information on demographics and socioeconomic status were collected along with substance use pattern (including alcohol, drugs, and medication) that may impact mood.

Section B. The Diagnostic Inventory for Depression (DID; Zimmerman, Sheeran, & Young, 2004) has been used as retrospective measure of depression severity, frequency, and duration. The instrument consists of 22 items and assesses depressive symptoms that had occurred over the past two weeks. For the purpose of this study, only depression symptom severity was examined using questions #1, 3, 5, 7-22 of the instrument. A total depression symptom severity score was calculated by adding up relevant item scores. Higher scores on the DID reflect greater depressive symptom severity. The DID has achieved high levels of internal consistency and test-retest reliability (Zimmerman et al., 2004). The DID has also shown convergent validity with other well-known measures of depression (i.e., Beck Depression Inventory; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961). Discriminant validity was demonstrated by the DID's high correlation with depression relative to its correlation with measurements of anxiety, substance use problems, somatization, and eating disorders (Zimmerman et al., 2004). For more information regarding the psychometric properties of the DID, the reader is directed to Zimmerman and colleagues (2004).

Section C. The Positive Affect and Negative Affect Schedule Expanded Form (PANAS-X; Watson & Clark, 1994) assesses two main constructs: positive affect (PA) and negative affect (NA). It has 60 items reflecting different feelings and emotions experienced within the past few weeks and that are rated on a 5-point scale that ranges from "very slightly or not at all", "a little", "moderately", "quite a bit", to "extremely". Items that load onto the PA scale include: happy,

joyful, delighted, cheerful, excited, enthusiastic, lively, energetic, proud, strong, confident, bold, daring, fearless, alert, attentive, concentrating, and determined. Items loading onto the NA scale include: afraid, scared, frightened, nervous, jittery, shaky, angry, hostile, irritable, scornful, disgusted, loathing, guilty, ashamed, blameworthy, angry at self, disgusted with self, dissatisfied with self, sad, blue, downhearted, alone, and lonely. Subscale scores are calculated by summing responses to the items that load on the specific scales. A high score on the PA scale denotes an alertness, concentration, and pleasurable engagement whereas a low score reflects feelings of sadness and lethargy (Gaudreau, Sanchez, & Blondin, 2006). A high score on the NA scale suggests feelings of distress in the form of anger and anxiety while a low score denotes calmness and serenity. The PA scale shows excellent internal consistency with Cronbach's α that ranged from .86 to .90, while the NA scale also shows strong Cronbach's α that ranged from .84 to .87 (Watson, Clark, & Tellegen, 1988). Test-retest reliability over an 8-week interval ranges from medium to strong reliability, with PA coefficients ranging from .47 to .68 and NA coefficients ranging from .39 to .71 (Watson et al., 1988). For more information regarding the psychometric properties of the PANAS-X, see Watson, et al. (1988). For the purpose of this study, only positive affect, which is one of the two components of subjective well-being, was of interest

Section D. Global life satisfaction which is another aspect of subjective well-being was measured with the Satisfaction with Life Scale (SWLS; Diener et al., 1985). The SWLS assesses an individuals' subjective evaluation of his or her life (Pavot & Diener, 1993) using five items such as "In most ways my life is close to my ideal" and "If I could live my life over, I would change almost nothing". Participants indicate their response on a 7-point scale that ranges from "strongly disagree" to "strongly agree". Item scores are summed to calculate a total life satisfaction score. High scores on the SWLS indicate endorsement of high life satisfaction.

According to a review of the psychometric properties of the instrument by Pavot and Diener (1993), the SWLS shows good discriminant and convergent validity with other measures such as with interviewer or informant ratings of life satisfaction and clinical measures of distress such as the Beck Depression Inventory (Beck et al., 1961). It also has shown strong internal reliability with a Cronbach's α of .87 and good test-retest reliability with a coefficient of .82 following a 2-month interval (Diener et al., 1985). Pavot and Dierner (1993) also found the SWLS to be sensitive to change in life satisfaction over the course of clinical treatment. For a more thorough review of the SWLS please see Pavot and Diener (1993).

Section E. The Contextual Emotion Regulation Questionnaire (CERQ) was used to assess the degree to which each of the seven ER strategies (acceptance, problem-solving, cognitive reappraisal, self-criticism, expressive suppression, experiential avoidance, worry/rumination) are used within six hypothetical negative interpersonal contexts and six hypothetical negative achievement contexts. The CERQ was designed specifically for the present study and represents a composite of two published scales. The ER strategies, their definitions, and response scale were adopted from the ER measure developed by Aldao and Nolen-Hoeksema (2012). The hypothetical negative interpersonal and achievement contexts were adopted from the Cognitive Styles Questionnaire (CSQ; Alloy, Abramson, Murray, Whitehouse, Hogan, 1997). The CSQ which itself is a modified and expanded version of the Attributional Style Questionnaire (ASQ; Peterson & Vilanova, 1988) and is used to measure participant's cognitive vulnerability to depression in achievement and interpersonal situations with negative outcomes. The internal consistency of the measure has also been found to be excellent with a Cronbach's α of .93 (Haeffel et al., 2005). The CERQ also had a single item to

assess the valence (positive or negative) and strength of their feelings when participants imagined themselves in each of the hypothetical negative contexts.

The six negative interpersonal contexts in the CERQ were represented by items 2, 3, 4, 7, 11, and 12, while the negative achievement contexts were captured by items 1, 5, 6, 8, 9, and 10. An example of a negative interpersonal context is "A friend comes to you with a problem, and you are not as helpful as you would like to be" while an example of a negative achievement context is "You can't get all the work done that others expect of you". For each context the participant rated the valence (positive or negative) and intensity of his/her feelings on a scale that ranges from -5 (extremely negative) to +5 (extremely positive), with a neutral midpoint of 0. Then the participant rated on a 5-point scale (0 = not at all to 4 = a lot) the extent to which he or she would engage in each of the seven different ER strategies (acceptance, problem-solving, cognitive reappraisal, self-criticism, expressive suppression, experiential avoidance, worry/rumination). To ensure that the participant understood the ER strategies, only a description of the ER (e.g., "Think of the situation differently in order to change how you feel") but not the label (e.g., "Cognitive reappraisal = think of the situation differently in order to change how you feel") was provided. The CERQ yielded six ER strategies scores for the interpersonal context, and six ER strategies for the achievement context. The interpersonal context score for a particular ER strategy was calculated by summing responses to that specific ER strategy across the six interpersonal contexts. An achievement context score was calculated for each ER strategy by summing responses across the six achievement contexts. Higher scores indicate greater use of the specific ER strategy.

Section F. In this section, one's level of sociotropy and autonomy was measured using the Sociotropy-Autonomy Scale – Revised (SAS-R; Clark, Steer, Beck, & Ross, 1995). This is a

59-item instrument where participants indicate the percentage of time (0%, 25%, 50%, 75%, 100%) that each item statement applies to them. Items on the SAS-R load onto two scales: sociotropy and autonomy. The Sociotropy scale consists of 29 items while the Autonomy scale consists of 30 items. The Autonomy scale can be further divided into two subscales: Solitude and Independence. Sociotropy focuses on needs for interpersonal relationships, affiliation and dependency while autonomy focuses on individualism and achievement (Beck, Taylor, & Robbins, 2003). Solitude, an aspect of autonomy, refers to feeling distant and cut-off from others, while independence focuses on individualism and a tendency to strive to meet high standards (Clark et al., 1994). The Sociotropy scale consists of items 1, 2, 4, 8, 10, 11, 14, 18, 19, 23, 24, 25, 27, 29, 31, 32, 34, 36, 37, 44, 45, 46, 49, 52, 53, 54, 55, 57, and 59. Examples of Sociotropy items include "I get uncomfortable when I am not sure how I am expected to behave in the presence of other people" and "It is important to be liked and approved of by others". Items 6, 7, 9, 12, 13, 16, 22, 26, 33, 39, 41, 47, and 48 load onto the Solitude subscale and items 3, 5, 15, 17, 20, 21, 28, 30, 35, 38, 40, 42, 43, 50, 51, 56, and 58 load onto the Independence subscale which are combined to form the Autonomy scale. Example items on the Autonomy scale include "I am reluctant to ask for help when working on a difficult and puzzling task" and "My close friends and family are too sensitive to what others say".

The SAS-R has been shown to have good internal consistency among its Sociotropy, Solitude, and Independence subscales with Cronbach's α of .88, .78, and .74, respectively (Clark et al., 1995). Previous findings support construct validity among the three scales. The Solitude subscale was found to be positively correlated with dysphoria, perfectionism, self-criticalness, and loneliness while in contrast independence was positively associated with perfectionism and self-efficacy, but inversely related to concern about approval from others. Sociotropy was

correlated with dependency, self-criticalness, and affiliation motivation (Clark et al., 1995). Only the Sociotropy and Autonomy were of interest in the present study.

Procedures

Recruitment Procedure

Following research ethics approval from Lakehead University and Confederation College, participants were recruited from Lakehead University, Confederation College, and the general community. Recruitment for research participants was carried out in the following ways. The university campus population was recruited with a message posted on the Communications Bulletin, and bulletin boards (see Appendix B). To reach individuals outside of the university, permission to post the same recruitment messages was sought from Confederation College, and in public areas such as convenience stores, and supermarkets within Thunder Bay. Advertisements about the study appeared in the Helping Hands section in the Chronicle Journal Newspaper (see Appendix C).

Those individuals who responded to the recruitment message were directed to the appropriate website (https://www.surveymonkey.com/s/XLLC2XM) where they could read a cover letter and a consent form that provides information about the study and procedure, and complete the research questionnaire if they choose to do so. Participants had the option of contacting the researchers for more information prior to beginning the study, if they so wished.

Main Study Procedure

The online survey for the main study (https://www.surveymonkey.com/s/XLLC2XM) was created with the use of SurveyMonkey which is a confidential and secure online tool used for survey construction and data-collection. All data collected was stored securely in the SurveyMonkey main database and could only be accessed by authorized users such as the

researchers themselves. In order to ensure confidentiality of the information and anonymity of participants, the consent form, which contained identifying information and the research questionnaire were hosted on separate weblinks. Upon completion of the study, the database was downloaded and deleted from the SurveyMonkey.

When participants first accessed the study weblink, they were presented with a cover page (Appendix D) that provided them with some general information about the study, its procedures, confidentiality and anonymity of responses, the voluntary nature of participation in the study, risks and benefits associated with participation, and the option to obtain a summary of findings upon completion of the project. Furthermore, the cover page informed participants that their anonymous responses would be stored securely in Dr. Tan's laboratory for a minimum period of five years. If the participant wished to complete a hard copy of the questionnaire, they were asked to notify one of the experimenters. Those who participated in the study were entered into a random prize draw for one of four $25 VISA gift cards. In addition to being entered in the draw, Introductory Psychology students from both Lakehead University Thunder Bay and Orillia campuses received one bonus point towards their course marks.

Following the cover page was the consent form for the participants to review (Appendix E and Appendix F). The consent form contained similar information as the cover page and contained sections that the participants filled out if they wished to receive a summary of the results upon the completion of the study. They also provided their contact information in case they win the random prize draws, and where applicable, their Introductory Psychology course information to receive their bonus mark.

After filling out the consent form, the participants clicked on the "PROCEED" button at the bottom of the page. This directed them to a separate weblink where they would complete the

research questionnaire anonymously. Upon completion of the questionnaire, they were redirected to a debriefing page and a list of therapy resources in Thunder Bay (see Appendix G).

RESULTS

Pre-Analysis Issues

There were some participants who had missing data on certain variables. Twenty-two participants had missing data on both the Depression scale and the PANAS-X while 22 participants had missing values on the Life Satisfaction scale. Furthermore, 33 participants had at least one missing item on the Sociotropy scale, 34 participants had missing data on the Autonomy scale, and 33 participants had missing data on at least one of the emotion regulation scales. For those participants with a large number (more than 5%) of missing items within a scale or subscale, a total score for that scale or subscale was not calculated and was excluded from the analyses. For the remaining participants, missing data was dealt with by replacing the missing value with the grand or overall mean value for that item. The data was analyzed with the computer program IBM SPSS Statistics 20. Overall mean values were generated by the SPSS Replace Missing Values Procedure.

The number of cases considered to adequately support the multiple regressions was estimated through the use of the following equation: $N > 50+8m$, with N representing the approximate number of cases required and m signifying the number of independent variables within the study design. In the current study there were 9 predictor variables and three criterion variables. The estimated sample size required was calculated to be 122 participants. The sample size of the current study is 313, which is larger than recommended.

Univariate and Multivariate Outliers

The data was screened for both univariate and multivariate outliers to eliminate or reduce the influence of these outlying cases on the results (Tabachnick & Fidell, 2007). The guideline of a *z*-score greater than ±3.29 standard deviations (Tabachnick & Fidell, 2007) was used to identify univariate outliers. In the current study, one univariate outlier was identified on both the Autonomy scale and the Problem-Solving scale (within the Achievement context), and two univariate outliers on the Depression scale. Raw scores that were identified as outliers were then recoded to one unit larger than the next most extreme score in their distribution. An examination for multivariate outliers among predictor variables for the different regression analyses was also carried out. Multivariate outliers were identified as having both a Mahalanobis distance with a χ^2 value that was significant at $p < .001$ (Tabachnick & Fidell, 2007) and a standard Cook's distance > 1 (Stevens, 2002). No multivariate outliers were found.

Normality, Linearity, and Homoscedasticity

Violation of normality can be due to problems related to skewness and kurtosis. To determine whether the distribution of variability in the dataset had significant problems with skewness or kurtosis, both were assessed by first visually inspecting the distribution of scores and then by determining whether the skewness statistic and kurtosis statistic was substantial as indicated by values of +/- 2 standard errors of kurtosis or skewness. It was found that Depression was substantially negatively skewed with a value of 10.47 and kurtotic with a value of 7.96 while Life Satisfaction was substantially positively skewed with a value of -4.74. To address problems with skewness and kurtosis, variables were subjected to square root transformations and distributions were inspected again. The transformations failed to address non-normality in the data as a visual inspection of the histograms showed that the variables continued to display

substantial skewness and kurtosis. However, Tabachnick and Fiddell (2007) stated that if the sample size is large, minor deviations in normality often do not have a substantial impact on the analyses. Therefore, instead of performing further transformations which would have made it difficult to interpret the findings (Tabachnick & Fidell, 2007), it was decided to use the untransformed data in the analysis. Thus, it is important to note that the validity of the results may be less robust due to some deviations from normality for some of the variables.

Linearity and homoscedasticity were also assessed by constructing simple bivariate scatterplots and by observing the resulting trends. Generally, assumptions of linearity and homoscedasticity were met with some mild to modest violations. A violation in linearity was observed between the variables Sociotropy and Life Satifaction which suggested that one of the variables were nonnormal. Violations in linearity and homoscedasticity would reduce the power of the analysis but given that the violations were minor, it was not deemed necessary to transform the variables (Tabachnick & Fiddell, 2007).

Multicollinearity

All variables were also checked for multicollinearity and singularity as this can cause problems with respect to interpretation of results. Multicollinearity and singularity are detected through correlations that are greater than .90 and near 1.00 respectively (Tabachnick & Fidell, 2007). There were no very high correlations between variables in the present study, with the highest correlation of .81 found for Expressive Suppression (used in an interpersonal context) and Expressive Suppression (used in an achievement context). Therefore, no variables were excluded from analyses.

Overview of Main Analyses

The variables that were examined in the present study are the cognitive personality style

(Sociotropy, Autonomy) from the SAS-R, depression symptom severity from the DID, positive affect and life satisfaction (two components of subjective well-being) from the SWLS and PANAS-X respectively, the three adaptive ER strategies (Acceptance, Problem-Solving, Cognitive Appraisal) and the four maladaptive ER strategies (Self-Criticism, Expressive Suppression, Experiential Avoidance, Worry/Rumination) from the CERQ. Prior to the analyses, the data were standardized as the variables were on different scaling dimensions.

Within-context bivariate correlations among all the variables were examined. A series of *t*-tests were also carried out to compare the use of the ER strategies across context. Separate analyses were then carried out for the Interpersonal context and for the Achievement context. Within each context, multiple regression analyses involving the predictors Sociotropy, Autonomy, one of the seven ER strategies, Sociotropy x ER strategy, and Autonomy x ER strategy were carried out. Significant interaction effects were followed up with simple slopes analyses (Aiken & West, 1991; O'Connor, 1998). The criterion variables were depression symptom severity, positive affect, and life satisfaction. Finally, a *t*-test was performed to compare the valence (positive or negative) and intensity of emotional reactions to the negative situations depicted in the Interpersonal versus Achievement context.

Bivariate Correlational Analysis

Bivariate correlations among the seven ER strategies were carried out separately for Interpersonal context (see Table 2) and Achievement context (see Table 3). Within the Interpersonal context, the adaptive ER strategies were significantly associated with one another with correlations ranging from .32 (between Cognitive Reappraisal and Acceptance) to .60 (between Reappraisal and Problem-Solving). The inter-correlations among maladaptive strategies were stronger ranging from .57 (between Experiential Avoidance and

Worry/Rumination) to .79 (between Experiential Avoidance and Expressive Suppression). The strong correlation between Experiential Avoidance and Expressive Suppression suggests the possibility of redundancy but the coefficient was not high enough to warrant a concern for singularity or multicollinearity. The inter-correlations between the adaptive and maladaptive ER strategies were generally non-significant with the highest significant correlation coefficient at r = .24 (between Experiential Avoidance and Cognitive Reappraisal). Thus the adaptive and maladaptive ER strategies appear to be conceptually quite distinct from each other within the Interpersonal context.

The same examination of the inter-correlations among the ER strategies was carried out for the Achievement context (see Table 3). The range of adaptive ER strategies inter-correlations was .38 (Acceptance and Cognitive Reappraisal) and .48 (between Acceptance and Problem-Solving). The correlations for the maladaptive ER strategies ranged from .42 (between Experiential Avoidance and Worry/Rumination) to .73 (between Experiential Avoidance and Expressive Suppression). The inter-correlations between the adaptive and maladaptive ER strategies ranged from nonsignificant to -.31 (between Acceptance and Self-Criticism), suggesting relatively conceptual differences between adaptive and maladaptive ER strategies within the Achievement context.

Comparison of ER Strategies Across Context

A series of *t*-tests were carried out to compare the use of each ER strategy across the two contexts. The descriptive statistics of each ER strategy within each context and the results of the *t*-tests are summarized in Table 4. Among the adaptive ER strategies, Acceptance was used more within the Interpersonal context while Problem-Solving was used to a lesser extent. Among the maladaptive ER strategies, Self-Criticism, Expressive Suppression, and Worry/Rumination were

used to a greater degree within the Achievement context.

Multiple Regression with Interpersonal Context Data

The findings related to each set of predictors and each criterion are presented below. For ease of interpretation, the significant results relating to the adaptive and maladaptive ER strategies within the Interpersonal context are summarized in Tables 5 and 6, respectively.

Interpersonal Context: Predictors = Acceptance, Sociotropy, Autonomy, Acceptance x Sociotropy, Acceptance x Autonomy

Criterion Depression. The overall regression results showed a significant finding, $\Delta R^2 = .14$, $F(5, 307) = 9.85$, $p < .001$. The significant predictors were Sociotropy ($b = .28$, $SE_b = .06$, $p < .001$) and Acceptance ($b = -.16$, $SE_b = .06$, $p < .05$).

Criterion PANAS Positive. The predictors were regressed on PANAS Positive and the results showed a significant change in *R*-value, $\Delta R^2 = .08$, $F(5, 307) = 5.38$, $p < .001$, with Sociotropy ($b = -.18$, $SE_b = .06$, $p < .01$) and Acceptance ($b = .18$, $SE_b = .06$, $p = .001$) as the only predictors to significantly contribute to the prediction of PANAS Positive.

Criterion Life Satisfaction. Results from the overall regression were significant $\Delta R^2 = .09$, $F(5, 307) = 6.34$, $p < .001$. Sociotropy ($b = -.18$, $SE_b = .06$, $p < .01$) and Acceptance ($b = .20$, $SE_b = .06$, $p = .001$) were both found to predict Life Satisfaction.

Interpersonal Context: Predictors = Problem-Solving, Sociotropy, Autonomy, Problem-Solving x Sociotropy, Problem-Solving x Autonomy

Criterion Depression. Multiple regression with the five predictors showed a significant change in *R*-value, $\Delta R^2 = .18$, $F(5, 307) = 13.53$, $p < .001$. There were three significant predictors: Sociotropy ($b = .31$, $SE_b = .054$, $p < .001$), Problem-Solving ($b = -.22$, $SE_b = .05$, $p < .001$), and Problem-Solving x Sociotropy ($b = -.10$, $SE_b = .05$, $p < .05$). The interaction term

was followed-up with simple slopes analyses, which showed Sociotropy to be more strongly related to Depression at low use of Problem-Solving (b = .44, SE_b = .06, p < .001) than at high use of Problem-Solving (b = .20, SE_b = .07, p < .01).

Criterion PANAS Positive. The predictors were entered to examine their relationship with PANAS Positive. The findings showed a significant change in R-value, ΔR^2 = .11, F(5, 307) = 7.65, p < .001, with Sociotropy (b = -.21, SE_b = .06, p < .001) and Problem-Solving (b = .27, SE_b = .06, p < .001) predicting PANAS Positive.

Criterion Life Satisfaction. The overall regression results were significant, ΔR^2 = .09, F(5, 307) = 6.16, p < .001. Sociotropy (b = -.23, SE_b = .06, p < .001) and Problem-Solving (b = .21, SE_b = .06, p < .001) were found to significantly predict Life Satisfaction.

Interpersonal Context: Predictors = Cognitive Reappraisal, Sociotropy, Autonomy, Cognitive Reappraisal x Sociotropy, Cognitive Reappraisal x Autonomy

Criterion Depression. The predictor variables were entered to examine their relationship with Depression, ΔR^2 = .16, F(5, 307) = 11.45, p < .001. Results showed that Sociotropy (b = .30, SE_b = .06, p < .001), Cognitive Reappraisal (b = -.16, SE_b = .05, p < .01), and Cognitive Reappraisal x Sociotropy (b = -.16, SE_b = .06, p < .01) contributed to the variance in Depression. Simple slopes analyses showed Sociotropy to be more strongly related to Depression at low use of Cognitive Reappraisal (b = .45, SE_b = .07, p < .001) than at high use of Cognitive Reappraisal (b = .19, SE_b = .08, p < .05).

Criterion PANAS Positive. The overall regression results showed a significant finding, ΔR^2 = .10, F(5, 307) = 6.75, p < .001. Both Sociotropy (b = -.24, SE_b = .06, p < .001) and Cognitive Reappraisal (b = .18, SE_b = .06, p = .001) significantly predicted PANAS-X Positive.

Criterion Life Satisfaction. The results also revealed that when the predictors were regressed on Life Satisfaction, the results demonstrated a significant change in *R*-value, ΔR^2 = .07, $F(5, 307) = 4.72$, $p < .001$. Both Sociotropy ($b = -.23$, $SE_b = .06$, $p < .001$) and Cognitive Reappraisal ($b = .16$, $SE_b = .06$, $p < .01$) contributed significantly to the prediction of Life Satisfaction.

Interpersonal Context: Predictors = Self-Criticism, Sociotropy, Autonomy, Self-Criticism x Sociotropy, Self-Criticism x Autonomy

Criterion Depression. The overall regression results showed a significant finding, ΔR^2 = .15, $F(5, 307) = 10.82$, $p < .001$. Both Sociotropy ($b = .21$, $SE_b = .06$, $p = .001$) and Self-Criticism ($b = .20$, $SE_b = .06$, $p < .01$) significantly contributed to the variance of Depression.

Criterion PANAS Positive. The predictors were entered to examine their relationship with PANAS Positive, $\Delta R^2 = .07$, $F(5, 307) = 4.65$, $p < .001$. Only Self-Criticism ($b = -19$, $SE_b = .06$, $p < .01$) contributed to the variance in PANAS Positive.

Criterion Life Satisfaction. Predictor variables were regressed on Life Satisfaction. The results showed a significant change in *R*-value, $\Delta R^2 = .07$, $F(5, 307) = 4.84$, $p < .001$. Only Self-Criticism ($b = -.18$, $SE_b = .06$, $p < .01$) contributed to the prediction of Life Satisfaction.

Interpersonal Context: Predictors = Expressive Suppression, Sociotropy, Autonomy, Expressive Suppression x Sociotropy, Expressive Suppression x Autonomy

Criterion Depression. The overall regression results showed a significant finding, ΔR^2 = .14, $F(5, 307) = 9.81$, $p < .001$. Sociotropy significantly contributed to the prediction of Depression ($b = .27$, $SE_b = .06$, $p < .001$).

Criterion PANAS Positive. The overall regression results indicated a significant change *R*-value, $\Delta R^2 = .07$, $F(5, 307) = 4.65$, $p < .001$. The significant predictors were Sociotropy ($b = -.13$, $SE_b = .07$, $p < .05$) and Expressive Suppression ($b = -.18$, $SE_b = .07$, $p < .01$).

Criterion Life Satisfaction. The predictors were regressed on the criterion variable Life Satisfaction. Overall results indicated a significant change *R*-value, $\Delta R^2 = .08$, $F(5, 307) = 5.08$, $p < .001$. Both Sociotropy ($b = -.13$, $SE_b = .06$, $p < .05$) and Expressive Suppression ($b = -.21$, $SE_b = .07$, $p < .01$) significantly predicted Life Satisfaction.

Interpersonal Context: Predictors = Experiential Avoidance, Sociotropy, Autonomy, Experiential Avoidance x Sociotropy, Experiential Avoidance x Autonomy

Criterion Depression. The overall regression results showed a significant finding, $\Delta R^2 = .14$, $F(5, 307) = 9.64$, $p < .001$. The significant predictors were Sociotropy, ($b = .30$, $SE_b = .06$, $p < .001$), and the interaction term Experiential Avoidance x Sociotropy ($b = -.13$, $SE_b = .05$, $p < .05$). The interaction was followed up with simple slopes analysis, which revealed Sociotropy to be more strongly related to Depression at low use of Experiential Avoidance ($b = .30$, $SE_b = .07$, $p < .001$) than at high use of Experiential Avoidance ($b = .19$, $SE_b = .08$, $p < .05$).

Criterion PANAS Positive. Multiple regression with the five predictors showed a significant change in *R*-value, $\Delta R^2 = .06$, $F(5, 307) = 3.56$, $p < .01$. Results showed that only the predictor Sociotropy ($b = -.18$, $SE_b = .06$, $p < .01$) significantly contributed to the prediction of PANAS Positive.

Criterion Life Satisfaction. The overall regression results showed a significant finding, $\Delta R^2 = .06$, $F(5, 307) = 4.18$, $p = .001$. The significant predictors were Sociotropy ($b = -.17$, $SE_b = .06$, $p < .01$) and Experiential Avoidance ($b = -.12$, $SE_b = .06$, $p < .05$).

Interpersonal Context: Predictors = Worry/Rumination, Sociotropy, Autonomy, Worry/Rumination x Sociotropy, Worry/Rumination x Autonomy

Criterion Depression. The predictors variables were entered to examine their relationship with Depression, $\Delta R^2 = .18$, $F(5, 307) = 13.73$, $p < .001$. Results showed that Sociotropy ($b = .18$, $SE_b = .07$, $p < .01$), Worry/Rumination ($b = .25$, $SE_b = .06$, $p < .001$), and the interaction Worry/Rumination x Autonomy ($b = .12$, $SE_b = .05$, $p < .05$) contributed to the variance in Depression. Simple slopes analysis was conducted to further decompose the interaction and the results showed Autonomy to be more strongly related to Depression at high use of Worry/Rumination ($b = .24$, $SE_b = .07$, $p < .01$) than at low use of Worry/Rumination ($b = .02$, $SE_b = .07$, *ns*).

Criterion PANAS Positive. The results also revealed that when the predictors were regressed on PANAS Positive, the results demonstrated a significant change in *R*-value, $\Delta R^2 = .10$, $F(5, 307) = 6.57$, $p < .001$. Worry/Rumination ($b = -.24$, $SE_b = .07$, $p < .001$) and Worry/Rumination x Autonomy ($b = -.12$, $SE_b = .05$, $p < .05$) significantly contributed to the prediction of PANAS Positive. The simple slopes analysis conducted on the interaction term was unable to decipher whether Autonomy was more strongly related to Depression at high use of Worry/Rumination than at low use of Worry/Rumination or visa versa because the slope coefficients for Autonomy on Depression at two levels of Worry/Rumination were both nonsignificant.

Criterion Life Satisfaction. The overall regression results showed a significant finding, $\Delta R^2 = .10$, $F(5, 307) = 6.74$, $p < .001$. Only Worry/Rumination ($b = -.28$, $SE_b = .07$, $p < .001$) was found to contribute to the prediction of Life Satisfaction.

Multiple Regression with Achievement Context Data

The findings related to each set of predictors and each criterion are presented below. For ease of interpretation, the significant results associated with the adaptive and maladaptive emotion regulation strategies within the Achievement context are tabulated in Tables 7 and 8, respectively.

Achievement Context: Predictors = Acceptance, Sociotropy, Autonomy, Acceptance x Sociotropy, Acceptance x Autonomy

Criterion Depression. The overall regression results revealed a significant finding, $\Delta R^2 = .13$, $F(5, 307) = 8.94$, $p < .001$. The single significant predictor was Sociotropy, ($b = .29$, $SE_b = .06$, $p < .001$).

Criterion PANAS Positive. The findings showed a significant change in R-value, $\Delta R^2 = .09$, $F(5, 307) = 5.33$, $p < .001$; both Sociotropy ($b = -.20$, $SE_b = .06$, $p = .001$), Acceptance ($b = .13$, $SE_b = .06$, $p < .05$), and the interaction term Acceptance x Sociotropy ($b = -.12$, $SE_b = .05$, $p < .05$) accounted for the variance. The interaction term was further examined using simple slopes analyses, which showed that the negative association between Sociotropy and PANAS Positive to be stronger at high use of Acceptance ($b = -.32$, $SE_b = .08$, $p < .001$) than at low use of Acceptance ($b = -.05$, $SE_b = .07$, *ns*).

Criterion Life Satisfaction. The results of the overall regression analysis were significant $\Delta R^2 = .82$, $F(5, 307) = 5.49$, $p < .001$. Sociotropy ($b = -.19$, $SE_b = .06$, $p = .001$) and Acceptance ($b = .16$, $SE_b = .05$, $p < .01$) significantly predicted Life Satisfaction.

Achievement Context: Predictors = Problem-Solving, Sociotropy, Autonomy, Problem-Solving x Sociotropy, Problem-Solving x Autonomy

Criterion Depression. The results also revealed that when the predictors were regressed on Depression, the results demonstrated a significant change in *R*-value, $\Delta R^2 = .20$, $F(5, 307) = 15.31$, $p < .001$. Both Sociotropy ($b = .25$, $SE_b = .06$, $p < .001$), Autonomy ($b = .14$, $SE_b = .05$, $p < .05$), and the interaction between Problem-Solving x Sociotropy ($b = -.14$, $SE_b = .05$, $p < .01$) contributed significantly to the prediction of Depression. Results from the simple slopes analysis showed Sociotropy to be more strongly related to Depression at low use of Problem-Solving ($b = .22$, $SE_b = .07$, $p < .01$) than at high use of Problem-Solving ($b = .20$, $SE_b = .08$, $p < .01$.

Criterion PANAS Positive. The results of the overall regression analysis were significant $\Delta R^2 = .12$, $F(5, 307) = 8.33$, $p < .001$. Sociotropy ($b = -.15$, $SE_b = .06$, $p < .01$) and Problem-Solving ($b = .28$, $SE_b = .06$, $p < .001$) significantly predicted PANAS Positive.

Criterion Life Satisfaction. The predictor variables were regressed on Life Satisfaction and the results showed a significant change in R-value, $\Delta R^2 = .12$, $F(5, 307) = 8.08$, $p < .001$. Results showed that Sociotropy ($b = -.18$, $SE_b = .06$, $p < .01$), Problem-Solving ($b = .20$, $SE_b = .06$, $p < .001$), the interaction Problem-Solving x Sociotropy ($b = .15$, $SE_b = .05$, $p < .01$), and the interaction Problem-Solving x Autonomy ($b = -.13$, $SE_b = .05$, $p < .05$) contributed significantly to the prediction of Life Satisfaction. The interaction between Sociotropy and Problem-Solving was followed with simple slopes analysis that revealed Sociotropy to be more strongly related to Life Satisfaction at low use of Problem-Solving ($b = -.25$, $SE_b = .07$, $p < .001$) than at high use of Problem-Solving ($b = -.06$, $SE_b = .08$, *ns*). The interaction between Autonomy and Problem-Solving was also followed with simple slopes analysis, however, the analysis was unable to decipher whether Autonomy was more strongly related to Life Satisfaction at high use of

Problem-Solving than at low use of Problem-Solving or visa versa because the slope coefficients for Autonomy on Life Satisfaction at two levels of Problem-Solving were both nonsignificant.

Achievement Context: Predictors = Cognitive Reappraisal, Sociotropy, Autonomy, Cognitive Reappraisal x Sociotropy, Cognitive Reappraisal x Autonomy

Criterion Depression. The results also revealed that when the predictors were regressed on Depression, the results demonstrated a significant change in *R*-value, $\Delta R^2 = .13$, $F(5, 307) = 13.25$, $p < .001$. Sociotropy ($b = .28$, $SE_b = .05$, $p < .001$), the ER strategy Cognitive Reappraisal ($b = -.18$, $SE_b = -.18$, $p = .001$), and Cognitive Reappraisal s Sociotropy ($b = -.18$, $SE_b = .05$, $p = .001$) contributed to the significant prediction of Depression. Simple slopes analysis was conducted to decompose the interaction term and results showed Sociotropy to be more strongly related to Depression at low use of Cognitive Reappraisal ($b = .44$, $SE_b = .06$, $p < .001$) than at high use of Cognitive Reappraisal ($b = .17$, $SE_b = .07$, $p < .05$).

Criterion PANAS Positive. The results of the overall regression analysis were significant, $\Delta R^2 = .10$, $F(5, 307) = 7.09$, $p < .001$. Sociotropy ($b = -.22$, $SE_b = .06$, $p < .001$), Cognitive Reappraisal ($b = .18$, $SE_b = .06$, $p = .001$) and Cognitive Reappraisal x Sociotropy ($b = -.13$, $SE_b = .05$, $p < .05$) contributed to the significant prediction of PANAS Positive. Simple slopes analyses showed Sociotropy to be more strongly related to PANAS Positive at high use of Cognitive Reappraisal ($b = -.35$, $SE_b = .08$, $p < .001$) than at low use of Cognitive Reappraisal ($b = -.07$, $SE_b = .07$, *ns*).

Criterion Life Satisfaction. The results also revealed that when the predictors were regressed on Life Satisfaction, the results demonstrated a significant change in *R*-value, $\Delta R^2 = .06$, $F(5, 307) = 4.10$, $p = .001$. Sociotropy ($b = -.22$, $SE_b = .06$, $p = .001$) and Cognitive Reappraisal ($b = .13$, $SE_b = .06$, $p = .05$) contributed to the prediction of Life Satisfaction.

Achievement Context: Predictors = Predictors Self-Criticism, Sociotropy, Autonomy, Self-Criticism x Sociotropy, Self-Criticism x Autonomy

Criterion Depression. Multiple regression with the five predictors showed a significant change in *R*-value, $\Delta R^2 = .16$, $F(5, 307) = 11.85$, $p < .001$. Both Sociotropy ($b = .24$, $SE_b = .06$, $p = .001$) and Self-Criticism ($b = .19$, $SE_b = .06$, $p = .01$) were found to contribute significantly to the prediction of Depression.

Criterion PANAS Positive. The predictors were regressed on the criterion variable PANAS Positive. Results indicated a significant change *R*-value, $\Delta R^2 = .06$, $F(5, 307) = 4.19$, $p = .001$. Both Sociotropy ($b = -.15$, $SE_b = .07$, $p = .05$) and Self-Criticism ($b = -.15$, $SE_b = .06$, $p = .05$) were found to contribute significantly to the prediction of PANAS Positive.

Criterion Life Satisfaction. The results of the overall regression analysis were significant $\Delta R^2 = .07$, $F(5, 307) = 4.81$, $p < .001$. Once again, both Sociotropy ($b = -.15$, $SE_b = .07$, $p = .05$) and Self-Criticism ($b = -.18$, $SE_b = .06$, $p = .01$) were found to contribute significantly to the prediction of Life Satisfaction.

Achievement Context: Predictors = Predictors Expressive Suppression, Sociotropy, Autonomy, Expressive Suppression x Sociotropy, Expressive Suppression x Autonomy

Criterion Depression. Multiple regression with the five predictors showed a significant relationship with Depression, $\Delta R^2 = .15$, $F(5, 307) = 10.59$, $p < .001$. Results showed that Sociotropy ($b = .27$, $SE_b = .06$, $p < .001$) and Expressive Suppression ($b = .15$, $SE_b = .06$, $p < .05$) contributed to the variance in Depression.

Criterion PANAS Positive. Results also revealed that when the predictors were regressed on PANAS Positive, there was a significant change in *R*-value, $\Delta R^2 = .07$, $F(5, 307) =$

4.70, $p < .001$. Both Sociotropy ($b = -.15$, $SE_b = .06$, $p < .05$) and Expressive Suppression ($b = -.19$, $SE_b = .06$, $p < .01$) were found to contribute to the prediction of PANAS Positive.

Criterion Life Satisfaction. The results of the overall regression analysis were significant $\Delta R^2 = .08$, $F(5, 307) = 5.09$, $p < .001$. Again, both Sociotropy ($b = -.16$, $SE_b = .06$, $p = .01$) and Expressive Suppression ($b = -.19$, $SE_b = .06$, $p < .05$) were found to contribute to the prediction of Life Satisfaction.

Achievement Context: Predictors = Predictors Experiential Avoidance, Sociotropy, Autonomy, Experiential Avoidance x Sociotropy, Experiential Avoidance x Autonomy

Criterion Depression. Multiple regression with the five predictors showed a significant change in *R*-value, $\Delta R^2 = .13$, $F(5, 307) = 9.53$, $p < .001$ and both Sociotropy ($b = -.12$, $SE_b = .05$, $p < .05$), and Experiential Avoidance x Sociotropy ($b = -.12$, $SE_b = .05$, $p < .05$) accounted for the variance. The interaction term was followed-up using a simple slope analysis, which showed Sociotropy to be more strongly related to Depression at low use of Experiential Avoidance ($b = .40$, $SE_b = .07$, $p < .001$) than at high use of Experiential Avoidance ($b = .19$, $SE_b = .08$, $p < .05$).

Criterion PANAS Positive. The overall regression was found to be significant $\Delta R^2 = .06$, $F(5, 307) = 3.97$, $p < .01$. The only significant predictor was Sociotropy ($b = -.17$, $SE_b = .06$, $p < .05$).

Criterion Life Satisfaction. The overall regression indicated that there was a significant result $\Delta R^2 = .07$, $F(5, 307) = 4.41$, $p < .001$. Both Sociotropy ($b = -.17$, $SEb = .06$, $p < .01$) and Experiential Avoidance ($b = -.12$, $SE_b = .06$, $p < .05$) contributed significantly to the prediction of Life Satisfaction.

Achievement Context: Predictors = Predictors Worry/Rumination, Sociotropy, Autonomy, Worry/Rumination x Sociotropy, Worry/Rumination x Autonomy

Criterion Depression. The results also revealed that when the predictor variables were regressed on Depression, the results demonstrated a significant change in *R*-value, $\Delta R^2 = .17$, $F(5, 307) = 12.43$, $p < .001$. Sociotropy ($b = .24$, $SE_b = .07$, $p < .001$), Worry/Rumination ($b = .18$, $SE_b = .06$, $p < .01$), and Worry/Rumination x Autonomy ($b = .14$, $SE_b = .05$, $p < .01$) contributed significantly to the prediction of Depression. Simple slopes analyses showed Autonomy to be more strongly related to Depression at high use of Worry/Rumination ($b = .25$, $SE_b = .07$, $p = .001$) than at low use of Worry/Rumination ($b = -.004$, $SE_b = .07$, *ns*).

Criterion PANAS Positive. The overall regression indicated that there was a significant result $\Delta R^2 = .06$, $F(5, 307) = 3.98$, $p < .01$. Only Sociotropy ($b = -.17$, $SE_b = .07$, $p < .05$) was found to contribute significantly to the prediction of PANAS Positive.

Criterion Life Satisfaction. Multiple regression with the five predictors showed a significant change in *R*-value, $\Delta R^2 = .06$, $F(5, 307) = 3.88$, $p < .001$. Only Sociotropy ($b = -.17$, $SE_b = .07$, $p < .05$) was found to contribute significantly to the prediction of Life Satisfaction.

Valence and Intensity of Emotional Reaction

Participants rated the valence (positive or negative) and intensity of their emotional reaction to each negative situation on the CERQ using a response scale ranging from -5 (extremely negative) to +5 (extremely positive), with the midpoint of 0 denoting neutral feeling. The mean emotional reaction was -2.01 ($SD = 1.17$, range = -5 to 3) for negative Interpersonal situations and -2.98 ($SD = 1.22$, range = -5 to 2) for negative Achievement situations. The results of a *t*-test revealed that while both contexts were evaluated as negative in valence, the

intensity of the negative emotional reaction was rated as greater in the Achievement context than in the Interpersonal context.

DISCUSSION

The primary objective of the present study was to examine the role that cognitive personality styles (sociotropy, autonomy) and emotion regulation strategies play in predicting psychological health outcomes (depression symptom severity, subjective well-being) in negative situations within two negative contexts (interpersonal, achievement). The emotion regulation strategies included adaptive (acceptance, problem-solving, cognitive reappraisal) and maladaptive (self-criticism, expressive suppression, experiential avoidance, worry/rumination) types as identified by Aldao et al (2010). Two hypotheses were generated. The first stated that in an interpersonal context, high sociotropy and use of maladaptive emotion regulation strategies would jointly predict high depression symptom severity and low subjective well-being. The second predicted that in the achievement context, high autonomy and use of maladaptive emotion regulation strategies would jointly predict high depression symptom severity and low subjective well-being.

Interpersonal Context

The first hypothesis which stated that sociotropy and maladaptive emotion regulation strategies would jointly predict poorer psychological outcomes in negative interpersonal situations was not supported. Instead, three surprising findings emerged.

First, *adaptive* emotion regulation strategies appear to play a stronger role than maladaptive emotion regulation strategies in predicting psychological outcomes. The link between sociotropy and depression was weakened at higher levels of problem-solving and cognitive reappraisal, both of which are considered adaptive strategies. This conflicts with

previous studies that have often found a weak and inconsistent link between adaptive emotion regulation strategies and psychopathology and a stronger link between maladaptive emotion regulation strategies and psychopathology (Aldao et al., 2010). A possible explanation for the discrepancy between the obtained results and the meta-analysis findings by Aldao et al. (2010) could be that the meta-analysis is based on a combination of results from disparate studies that had employed different tools to measure each adaptive emotion regulation strategies; variations in measurement tools might have led to different findings on the relationship between adaptive strategies and psychopathology. Also in meta-analytic studies, the findings are expressed on a general level; thus the details of specific studies, including those with results that are congruent with the present investigation, might not carry much weight especially if they are in the minority.

The second surprising finding was that there was the stronger link between sociotropy and depression at low levels of experiential avoidance than at high levels. Experiential avoidance is generally considered to be maladaptive and thus, one would expect that the sociotropy-depression link to be stronger at higher experiential avoidance. However, the study showed the opposite finding, which implies that experiential avoidance might actually be adaptive in attenuating depression symptoms for people who have sociotropic characteristics. It is important to note that previous works did not consider the context in which experiential avoidance was implemented and therefore this unexpected finding may suggest that context holds important relevance when labeling an emotion regulation strategy as serving an adaptive or maladaptive function. Perhaps if other studies had examined the relationship between sociotropy and depression within a negative interpersonal context they would also find experiential avoidance to behave like an adaptive emotion regulation strategy. Another possible explanation as to why experiential avoidance appears to be behaving like an adaptive emotional regulation

strategy is perhaps that this study may be examining only the short-term implications of using experiential avoidance. It is likely that the majority of current sample who are in their early twenties have not yet experienced the negative effects associated with long-term experiential avoidance. Previous research has shown that experiential avoidance is often linked with positive effects in the short term but tends to be counterproductive over time (Gold & Wegner, 1995; Geraerts, Merckelbach, Jelicic, & Smeets, 2006). If the sample in this study were to be followed into their late adulthood, it is possible that they might display a stronger relationship between sociotropy and depression at higher than lower levels of experiential avoidance. If so, this would confirm the tenet that experiential avoidance becomes a maladaptive strategy only over a long period of time. A final possible explanation for this finding could be that participants interpreted experiential avoidance in the research questionnaire to reflect an emotional regulation strategy where individuals deliberately focus on pleasant thoughts or engage in activities to divert their attention in more positive directions. This type of coping, which is more in line with distraction, has been found to serve an adaptive function (Morrow & Nolen-Hoeksema, 1990; Nolen-Hoeksema et al., 1993).

The third surprising finding is that autonomy, and not sociotropy, played a role in predicting greater depression and lower positive affect in the presence of greater worry/rumination. Individuals who have high levels of autonomy are not expected to experience psychological distress in negative interpersonal situations because their self-worth is more tied to achievement rather than interpersonal successes and failures (Beck, 1983). Rather, individuals with high sociotropic characteristics are expected to be sensitive to interpersonal failures and experience depression symptoms and poorer subjective well-being (positive affect and life satisfaction) should they engage in a worrying or ruminative strategy. To explain the unexpected

finding, it could be argued that both achievement and interpersonal failures entail a performance aspect (i.e., negative interpersonal outcomes might be construed as a social performance failure) such that, a person with high autonomous characteristics would exhibit the same response in both negative situations. There is evidence to show that individuals with autonomous characteristics are quite concerned with maintaining their social status (Wong & Mak, 2012). Perhaps, within a negative interpersonal context, autonomous individuals feel depressed because their social status is doubted, and in the presence of rumination, the depressive symptoms become magnified. On the other hand, if autonomous individuals were to respond to both achievement and interpersonal situations, one would expect autonomy to play a role together with the other emotion regulation strategies to predict depression and subjective well-being in the interpersonal context. Such was not the case in the present study. Previous research points to the particular toxic effects of worrying and rumination on psychological health. Individuals who engage in high amounts of rumination tend to experience more persistent and severe depressive symptomology than those who engage in other emotion regulation strategies (Nolen-Hoeksema, 1991). It is likely that because worrying and rumination have such deleterious effects on psychological health, even autonomous people are vulnerable to experiencing depressive symptoms in negative interpersonal situations when they engage in these strategies.

In contrast, sociotropy might already be so strongly linked to poorer psychological outcomes in negative interpersonal situations that it will independently predict high depression and lower subjective well-being, irrespective of maladaptive emotion regulation strategies. Indeed, the results in the present study bear out this proposition. Higher levels of sociotropy alone was consistently linked to higher levels of depression symptoms and lower levels of subjective well-being consisting of positive affect and life satisfaction. This is not surprising

because previous research has often found high sociotropic individuals to have a higher likelihood of experiencing negative psychological outcomes in negative social situations than low sociotropic individuals (Dozois & Back-Dermott, 2000). One explanation for this finding could be that since sociotropic individuals tend to be highly dependent on others and have a strong need for social acceptance (Moos & Holohan, 2003), a negative interpersonal context may act as a barrier in obtaining these social necessities, thereby causing psychological turmoil for the individual. This supports Beck and colleagues' proposition (1983) that sociotropic people tend to feel worse when they face negative outcomes in the interpersonal sphere.

As well, the results of the present study indicated that the adaptive emotion regulation strategies (acceptance, problem-solving, and cognitive reappraisal) were associated with greater positive affect and life satisfaction. Individuals who reported lower use of acceptance also reported greater levels of depression symptoms. The present study also found that individuals who engaged in greater maladaptive emotion regulation strategy, specifically self-criticism, reported greater levels of depression symptoms. Furthermore, those who engaged in more self-criticism, expressive suppression, or worry/rumination also reported lower levels of positive affect and life satisfaction whereas experiential avoidance was linked to lower life satisfaction. Taken together, these findings support the work by Gross and John (2003) which showed adaptive emotion regulation strategies to be linked to better psychological outcomes and while the reverse was seen for maladaptive emotion regulation strategies.

Achievement Context

The second hypothesis that predicted high autonomy and maladaptive emotion regulation strategies to be associated with poorer psychological outcomes was partially supported. Autonomy was associated with greater depression levels in the presence of worry/rumination but

not the other maladaptive emotion regulation strategies. The most surprising finding is the substantial role that sociotropy played in predicting psychological outcomes within the achievement context while autonomy played a minor role. Sociotropy independently and consistently predicted more severe depression symptoms and lower positive affect and life satisfaction in the face of achievement failure. This is a surprising finding because according to Beck's theory (1983), those with a sociotropic style are not typically vulnerable to negative achievement contexts.

It is puzzling that sociotropy played a very significant role in predicting psychological outcomes within an achievement context while autonomy played a minimal role. Perhaps, individuals with sociotropic characteristics are as sensitive to achievement failures as to interpersonal failures and therefore make no distinction between negative outcomes in either context. Possibly they view achievement failures to engender interpersonal rejection (e.g., failing to achieve will lead to others disapproving of them), and it is this sensitivity to interpersonal rejection that is reflected in the observed association between sociotropy and poorer psychological outcomes within the achievement context. Another possible explanation as to why autonomy was a much weaker predictor than sociotropy of psychological outcomes within the achievement context is that the achievement situations presented in the study were not sufficiently distressing for autonomous individuals. Perhaps had the situations been made more negative such that they incur more severe consequences and greater threats to one obtaining self-directed goals, then autonomy might have played a stronger role in predicting psychological outcomes within the achievement context.

Results also showed the relationship between sociotropy and depression to be stronger at lower use of experiential avoidance, which is surprising given that experiential avoidance is

considered to be a maladaptive emotion regulation strategy. As such, one would expect the negative relationship between sociotropy and depression to be intensified in the presence of experiential avoidance. Perhaps this speaks to the importance of context where experiential avoidance is adaptive in certain situations. However given that the same results were obtained for experiential avoidance with sociotropy and depression within the interpersonal context, experiential avoidance can be deemed at least within the present study to serve an adaptive rather a maladaptive function, regardless of context.

Other significant findings within the achievement context showed that adaptive emotion regulation strategies (acceptance, problem-solving, cognitive reappraisal) were linked to better subjective well-being (positive affect, life satisfaction). These findings are congruent with previous literature that had also found a positive association between adaptive emotion regulation strategies and subjective well-being (Aryee et al., 1999; Gross & John, 2003). It was also observed that problem-solving and cognitive reappraisal attenuated the relationship between sociotropy and depression. Altogether, these results point to the adaptive function that problem-solving and cognitive reappraisal played in improved psychological outcomes among individuals with sociotropic characteristics. Contrary to expectations, problem-solving attenuated the sociotropy – lower life satisfaction link, and cognitive reappraisal similarly weakened the sociotropy – lower positive affect link. These findings are surprising, because they are incongruent with previous studies, which had found that those who often used either acceptance or cognitive reappraisal strategies experience positive outcomes (Aldao et al., 2010). These findings reiterate that it is necessary to consider both the cognitive personality style and the context in which the emotion regulation strategies are being implemented before determining whether an emotion regulation strategy will be helpful.

The results of the present study also indicated that the maladaptive emotion regulation strategies, self-criticism and expressive suppression, consistently made independent contributions to the prediction of poorer psychological outcomes in the form of more severe depression levels and lower positive affect and life satisfaction. Experiential avoidance predicted lower life satisfaction. These findings are consistent with research by Aldao and colleagues (2010) who had also found maladaptive strategies to be linked to negative psychological outcomes. These results are also similar to the findings obtained within the interpersonal context and therefore reiterate that the use of maladaptive emotion regulation strategies is linked to poorer psychological outcomes.

Differences Between Contexts

When examining how emotion regulation strategies independently predicted psychological outcomes, a few differences related to context were observed. Both acceptance and problem-solving predicted lower depression in the interpersonal context but not in the achievement context. Greater use of expressive suppression was linked to greater depression only within the achievement context and not within the interpersonal context. Finally, worry/rumination predicted poorer subjective well-being (positive affect and life satisfaction) within the interpersonal but not the achievement context. Altogether, the results suggest that the context in which emotion regulation strategies are used is an important factor that has a bearing on mental health outcomes.

Integrated Summary and Conclusions

The present study indicates that for the most part, sociotropy and emotion regulation strategies independently make contributions to psychological outcomes in both interpersonal and achievement contexts. Individuals with high sociotropic characteristics reported more severe

depression symptoms and poorer subjective well-being (positive affect and life satisfaction). Individuals who engage in adaptive emotion regulation strategies reported better psychological health and the reverse was seen for those who used maladaptive emotion regulation strategies. High sociotropic people who face negative outcomes, either in the interpersonal or achievement domain, have better psychological outcomes when they use problem-solving, cognitive reappraisal, and experiential avoidance to regulate their emotions. High autonomous individuals who worry or ruminate in the face of either interpersonal or achievement failures have poorer psychological outcomes. Sociotropy played a substantial role while autonomy played a minor role in predicting poorer psychological outcomes within the achievement context.

Additionally, experiential avoidance, which is generally considered to be a maladaptive strategy, appeared to serve a protective function against depression for high sociotropic individuals in negative interpersonal and achievement contexts. Perhaps experiential avoidance can act as both adaptive and maladaptive - it is often linked with positive effects in the short run but with negative effects in the long run (Gold & Wegner, 1995; Geraerts et al., 2006). Given that the function of experiential avoidance changes over time, this raises the same question for other emotion regulation strategies – how stable are their relationships to psychological health when used over a long period of time? Perhaps the classification of emotion regulation strategies as serving an adaptive or maladaptive function is more complex than it appears. At the present time, their labeling is linked to the psychological outcomes that they purportedly produce. It is possible that the degree or valence of their functionality might change with the chronicity of their use. Results also showed that the association between emotional regulation strategies and psychological outcomes is context-dependent. Acceptance and problem-solving are linked to lower depression in the interpersonal but not achievement context. Expressive suppression is

associated with greater depression in the achievement but not interpersonal context. Worry/rumination is related to lower positive affect and life satisfaction within the interpersonal but not the achievement context.

In conclusion, cognitive personality styles, in particular sociotropy, and emotion regulation strategies independently predicted psychological outcomes in negative interpersonal and achievement contexts. Adaptive emotion regulation strategies predicted better outcomes than maladaptive emotion strategies. There were three instances in which cognitive personality styles and emotional regulation strategies jointly predict psychological outcomes. The adaptive strategies of problem-solving and cognitive reappraisal seemed to have functional value in high sociotropic individuals who reported less depression in both negative interpersonal and achievement contexts. The maladaptive strategy of worry/rumination seems to serve a dysfunctional value for high autonomous individuals who reported more depression in both negative interpersonal and achievement contexts. Finally, experiential avoidance that is conceptualized as a maladaptive strategy appeared serve a useful function in high sociotropic individuals who reported less depression in both negative interpersonal and achievement context.

Strengths and Limitations

The findings of the present study need to be considered within its strengths and drawbacks. The sample size increases reliability of the findings and generalizability to the population from which the sample was drawn, and also accords more statistical power in the data analyses (Cohen, 1992). However, the sample consisted of predominantly nonclinical university students with a limited age range thereby limiting the generalizability of the results to non-student, older, and/or clinical populations. Moreover, the academic milieu in which university students function tend to be highly competitive and achievement-oriented; thus achievement

contexts might hold more relevance for the sample in this study compared to the general or clinical population. As well, it should be noted that the emotion regulation strategies in this study were assessed with the use of a self-report measure which assesses what individuals think they would do or should do in certain imagined situations, but not necessarily how they would actually behave in real life situations. Thus naturalistic observation studies would be helpful in this regard to obtain verifiable data. As well, the emotional reactions of the participants to the negative scenarios presented to them were moderately negative at best. This could have attenuated the participants' responses to the contexts presented in the research questionnaire. Moreover, it is not clear whether participants found the scenarios to be relevant to their personal lives and as ones to which they could relate. However, these scenarios were developed, tested, and used by researchers who worked with student samples (Alloy et al., 1997), which ameliorates the concern.

Implications

The results of the present study suggest that the focus of psychological treatments for emotional dysregulation could be on increasing the use of adaptive emotion regulation strategies than decreasing the use of maladaptive emotion regulation strategies in order to effectively decrease symptoms of depression and increase subjective well-being. More specifically, interventions could focus on increasing problem-solving and cognitive reappraisal skills to attenuate depressive symptoms and to boost positive affect and satisfaction with life in those with a sociotropic style. Developing skills in problem-solving and cognitive reappraisal may help sociotropic individuals cope successfully with negative interpersonal situations to which they are particularly sensitive (Connor-Smith & Compas, 2002). The present study also highlights the importance of considering the cognitive personality style and the context in which the emotion

regulation strategies are being implemented. It appears that it would be beneficial for therapists to teach emotion regulation strategies based on the client's cognitive personality style and to help the client recognize which emotion regulation strategies are appropriate for which negative situations.

Directions for Future Research

The present study raises a number of questions for further investigation. First, the designation of any particular emotion regulation strategy as adaptive and maladaptive may be context or time-dependent in that their associated psychological outcomes may be determined partly by the nature of the situation that gives rise to emotional distress, or by the chronicity of use of the strategy. Longitudinal studies that follow a cohort over time and over different situations to assess how the use of different strategies predict psychological health would help to answer this question. Second, the correlational research design of the study does not offer insight into causal relationships among emotion regulation strategies, cognitive personality styles, context, and psychological outcomes. The link among any of these variables could be causal in a unidirectional manner (e.g., the use of a specific emotion regulation strategy leads to increased depression, or depression leads to increased use of a particular emotion regulation strategy) or reciprocal feedback manner (e.g., the influence goes both ways). Longitudinal studies that observe the temporal sequence of emotion strategy use in different situations and mental health outcomes in individuals with different cognitive personality styles could be designed to examine the inter-causal relationships. Third, the external validity of the findings could be determined through more naturalistic studies where individuals are monitored in real-life situations for their reactions to stressors in different situations that give rise to emotional distress. Fourth, the generalizability of the results from the present study could be established by replicating the study

with other populations such as non-students, older individuals, and clinical samples. Overall, continued investigations into how individuals regulate their emotions in different situations to achieve better mental health is important as this area holds rich possibilities for informing cognitive and behavioural interventions for those who struggle with emotional dysregulation.

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Table 1

Sample Demographics and Descriptive Statistics of Cognitive Personality Styles and Psychological Functioning

Variable	Group		
	Male (n = 64)	Female (n = 249)	Total (N = 313)
Age	M = 24.39 years (SD = 10.29)	M = 23.08 years (SD = 8.92)	M = 23.33 years (SD = 9.20)
Ethnicity			
Aboriginal	2	19	21
Asian	0	5	5
Latino	1	3	4
Caucasian	59	217	274
Black	1	6	7
Unspecified	0	2	2
Student Status			
Student	56	238	294
Non-Student	6	11	17
Unspecified	2	0	2
Diagnosis			
Depression	2	14	16
Anxiety	0	16	16
Bipolar	0	2	2
Other[a]	2	7	9
Sociotropy Score	M = 51.77 (SD = 16.98)	M = 59.49 (SD = 20.06)	M = 57.91 (SD = 19.69)
Autonomy Score	M = 61.92 (SD = 13.65)	M = 56.85 (SD = 13.69)	M = 58.68 (SD = 13.76)
Depression Score	M = 29.14 (SD = 7.98)	M = 29.99 (SD = 8.81)	M = 29.82 (SD = 8.64)
PANAS-Positive Score	M = 25.80 (SD =7.72)	M = 24.53 (SD = 7.72)	M = 24.79 (SD = 7.72)
Life Satisfaction Score	M = 23.59 (SD = 6.93)	M = 23.80 (SD = 7.13)	M = 23.76 (SD = 7.08)

[a]Other = Other diagnoses include Attention Deficit Hyperactivity Disorder, Schizophrenia, Panic Disorder Without Agoraphobia, Posttraumatic Stress Disorder, Anorexia Nervosa, and Dyssomnia.

Table 2

Bivariate Correlations Among ER Strategies Within Interpersonal Context.

	1	2	3	4	5	6	7
1. Acceptance							
2. Problem-Solving	.35**						
3. Cognitive Reappraisal	.32**	.60**					
4. Self-Criticism	-.19**	.10	.22**				
5. Expressive Suppression	-.10	.05	.18**	.65**			
6. Experiential Avoidance	-.06	.05	.24**	.59**	.79**		
7. Worry/Rumination	-.19**	.06	.11	.72**	.68**	.57**	

Note. $N = 313$.

**$p < .01$, *$p < .05$

Table 3

Bivariate Correlations Among ER Strategies Within Achievement Context.

	1	2	3	4	5	6	7
1. Acceptance							
2. Problem-Solving	.48**						
3. Cognitive Reappraisal	.38**	.45**					
4. Self-Criticism	-.31**	-.16**	.05				
5. Expressive Suppression	-.16	-.16**	.06	.64**			
6. Experiential Avoidance	-.11**	-.11*	.24**	.50**	.73**		
7. Worry/Rumination	-.18**	-.05	-.06	.62**	.56**	.42**	

Note. $N = 313$.

**$p < .01$, *$p < .05$

Table 4

Paired-Sample t-Test Comparing Use of Emotion Regulation Strategies Between Contexts.

ER Strategy	Context	*M*	*SD*	*t*(312)	*p*
Acceptance	Interpersonal	13.96	5.30	4.93	<.001
	Achievement	12.89	5.86		
Problem-solving	Interpersonal	13.48	4.43	-13.91	<.001
	Achievement	16.73	4.52		
Cognitive Reappraisal	Interpersonal	12.75	5.01	1.04	.30
	Achievement	12.54	5.19		
Self-criticism	Interpersonal	9.52	5.76	-8.75	<.001
	Achievement	11.46	6.34		
Expressive Suppression	Interpersonal	11.21	5.92	-2.5	.01
	Achievement	11.74	6.19		
Experiential Avoidance	Interpersonal	10.28	5.54	.43	.67
	Achievement	10.20	5.76		
Worry/Rumination	Interpersonal	10.85	5.57	-12.57	<.001
	Achievement	13.81	6.17		

Table 5

Summary of significant findings from multiple regression analyses for adaptive strategies within interpersonal context.

Criterion	Significant Main Results	Significant Follow-Up Findings
	Predictors = Acceptance, Sociotropy, Autonomy, Acceptance x Sociotropy, Acceptance x Autonomy	
Depression	$\Delta R^2 = .14$, $F(5, 307) = 9.85$, $p < .001$	Sociotropy, $b = .28$, $SE_b = .06$, $p < .001$ Acceptance, $b = -.16$, $SE_b = .06$, $p < .05$
PANAS-X Positive	$\Delta R^2 = .08$, $F(5, 307) = 5.38$, $p < .001$	Sociotropy, $b = -.18$, $SE_b = .06$, $p < .01$ Acceptance, $b = .18$, $SE_b = .06$, $p = .001$
Life Satisfaction	$\Delta R^2 = .09$, $F(5, 307) = 6.34$, $p < .001$	Sociotropy, $b = -.18$, $SE_b = .06$, $p < .01$ Acceptance, $b = .20$, $SE_b = .06$, $p = .001$
	Predictors = Problem-Solving, Sociotropy, Autonomy, Problem-Solving x Sociotropy, Problem-Solving x Autonomy	
Depression	$\Delta R^2 = .18$, $F(5, 307) = 13.53$, $p < .001$	Sociotropy, $b = .31$, $SE_b = .054$, $p < .001$ Problem-Solving, $b = -.22$, $SE_b = .05$, $p < .001$ Problem-Solving x Sociotropy, $b = -.10$, $SE_b = .05$, $p < .05$. Simple slopes showed Sociotropy to be more strongly related to depression at low Problem-Solving ($b = .44$, $SE_b = .06$, $p < .001$) than high Problem-Solving ($b = .20$, $SE_b = .07$, $p < .01$).
PANAS-X Positive	$\Delta R^2 = .11$, $F(5, 307) = 7.65$, $p < .001$	Sociotropy, $b = -.21$, $SE_b = .06$, $p < .001$ Problem-Solving, $b = .27$, $SE_b = .06$, $p < .001$
Life Satisfaction	$\Delta R^2 = .09$, $F(5, 307) = 6.16$, $p < .001$	Sociotropy, $b = -.23$, $SE_b = .06$, $p < .001$ Problem-Solving, $b = .21$, $SE_b = .06$, $p < .001$
	Predictors = Cognitive Reappraisal, Sociotropy, Autonomy, Cognitive Reappraisal x Sociotropy, Cognitive Reappraisal x Autonomy.	
Depression	$\Delta R^2 = .16$, $F(5, 307) = 11.45$, $p < .001$	Sociotropy, $b = .30$, $SE_b = .06$, $p < .001$ Cognitive Reappraisal, $b = -.16$, $SE_b = .05$, $p < .01$ Cognitive Reappraisal x Sociotropy, $b = -.16$, $SE_b = .06$, $p < .01$ Simple slopes analyses showed Sociotropy to be more strongly related to Depression at low use of Cognitive Reappraisal ($b = .45$, $SE_b = .07$, $p < .001$) than at high use of Cognitive Reappraisal ($b = .19$, $SE_b = .08$, $p < .05$).
PANAS-X Positive	$\Delta R^2 = .10$, $F(5, 307) = 6.75$, $p < .001$	Sociotropy, $b = -.24$, $SE_b = .06$, $p < .001$ Cognitive Reappraisal, $b = .18$, $SE_b = .06$, $p = .001$
Life Satisfaction	$\Delta R^2 = .07$, $F(5, 307) = 4.72$, $p < .001$	Sociotropy, $b = -.23$, $SE_b = .06$, $p < .001$ Cognitive Reappraisal, $b = .16$, $SE_b = .06$, $p < .01$

Table 6

Summary of significant findings from multiple regression analyses for maladaptive strategies within interpersonal context.

Criterion	Significant Main Results	Significant Follow-Up Findings
Predictors Self-Criticism, Sociotropy, Autonomy, Self-Criticism x Sociotropy, Self-Criticism x Autonomy.		
Depression	$\Delta R^2 = .15$, $F(5, 307) = 10.82$, $p < .001$	Sociotropy, $b = .21$, $SE_b = .06$, $p = .001$ Self-Criticism, $b = .20$, $SE_b = .06$, $p < .01$
PANAS-X Positive	$\Delta R^2 = .07$, $F(5, 307) = 4.65$, $p < .001$	Self-Criticism, $b = -19$, $SE_b = .06$, $p < .01$
Life Satisfaction	$\Delta R^2 = .07$, $F(5, 307) = 4.84$, $p < .001$	Self-Criticism, $b = -.18$, $SE_b = .06$, $p < .01$
Predictors Expressive Suppression, Sociotropy, Autonomy, Expressive Suppression x Sociotropy, Expressive Suppression x Autonomy.		
Depression	$\Delta R^2 = .14$, $F(5, 307) = 9.81$, $p < .001$	Sociotropy, $b = .27$, $SE_b = .06$, $p < .001$
PANAS-X Positive	$\Delta R^2 = .07$, $F(5, 307) = 4.65$, $p < .001$	Sociotropy, $b = -.13$, $SE_b = .07$, $p < .05$ Expressive Suppression, $b = -.18$, $SE_b = .07$, $p < .01$
Life Satisfaction	$\Delta R^2 = .08$, $F(5, 307) = 5.08$, $p < .001$	Sociotropy, $b = -.13$, $SE_b = .06$, $p < .05$ Expressive Suppression, $b = -.21$, $SE_b = .07$, $p < .01$
Predictors Experiential Avoidance, Sociotropy, Autonomy, Experiential Avoidance x Sociotropy, Experiential Avoidance x Autonomy.		
Depression	$\Delta R^2 = .14$, $F(5, 307) = 9.64$, $p < .001$	Sociotropy, $b = .30$, $SE_b = .06$, $p < .001$ Experiential Avoidance x Sociotropy, $b = -.13$, $SE_b = .05$, $p < .05$. Simple slopes analyses showed Sociotropy to be more strongly related to Depression at low use of Experiential Avoidance ($b = .30$, $SE_b = .07$, $p < .001$) than at high use of Experiential Avoidance, $b = .19$, $SE_b = .08$, $p < .05$
PANAS-X Positive	$\Delta R^2 = .06$, $F(5, 307) = 3.56$, $p < .01$	Sociotropy, $b = -.18$, $SE_b = .06$, $p < .01$
Life Satisfaction	$\Delta R^2 = .06$, $F(5, 307) = 4.18$, $p < .01$	Sociotropy, $b = -.17$, $SE_b = .06$, $p < .01$ Experiential Avoidance, $b = -.12$, $SE_b = .06$, $p < .05$
Predictors Worry/Rumination, Sociotropy, Autonomy, Worry/Rumination x Sociotropy, Worry/Rumination x Autonomy.		
Depression	$\Delta R^2 = .18$, $F(5, 307) = 13.73$, $p < .001$	Sociotropy, $b = .18$, $SE_b = .07$, $p < .01$ Worry/Rumination, $b = .25$, $SE_b = .06$, $p < .001$ Worry/Rumination x Autonomy, $b = .12$, $SE_b = .05$, $p < .05$ Simple slopes analyses showed Autonomy to be more strongly related to Depression at high use of Rumination ($b = .24$, $SE_b = .07$, $p < .01$) than at low use of Rumination ($b = .02$, $SE_b = .07$, *ns*)
PANAS-X Positive	$\Delta R^2 = .10$, $F(5, 307) = 6.57$, $p < .001$	Worry/Rumination, $b = -.24$, $SE_b = .07$, $p < .001$ Worry/Rumination x Autonomy, $b = -.12$, $SE_b = .05$, $p < .05$ Simple slopes analyses *ns.*
Life Satisfaction	$\Delta R^2 = .10$, $F(5, 307) = 6.74$, $p < .001$	Worry/Rumination, $b = -.28$, $SE_b = .07$, $p < .001$

Table 7

Summary of significant findings from multiple regression analyses for adaptive strategies within achievement context.

Criterion	Significant Main Results	Significant Follow-Up Findings
Predictors = Acceptance, Sociotropy, Autonomy, Acceptance x Sociotropy, Acceptance x Autonomy		
Depression	ΔR^2 = .13, $F(5, 307)$ = 8.94, p < .001	Sociotropy, b = .29, SE_b = .06, p < .001
PANAS-X Positive	ΔR^2 = .09, $F(5, 307)$ = 5.33	Sociotropy, b = -.20, SE_b = .06, p = .001 Acceptance, b = .13, SE_b = .06, p < .05) Acceptance x Sociotropy, b = -.12, SE_b = .05, p < .05. Simple slopes analyses showed Sociotropy to be more strongly related to PANAS Positive at high use of Acceptance (b = -.32, SE_b = .08, p < .001) than at low use of Acceptance (b = -.05, SE_b = .07, *ns*)
Life Satisfaction	ΔR^2 = .82, $F(5, 307)$ = 5.49, p < .001	Sociotropy, b = -.19, SE_b = .06, p = .001 Acceptance, b = .16, SE_b = .05, p < .01
Predictors = Problem-Solving, Sociotropy, Autonomy, Problem-Solving x Sociotropy, Problem-Solving x Autonomy		
Depression	ΔR^2 = .20, $F(5, 307)$ = 15.31, p < .001	Sociotropy, b = .25, SE_b = .06, p < .001 Autonomy, b = .14, SE_b = .05, p < .05 Problem-Solving x Sociotropy, b = -.14, SE_b = .05, p < .01. Simple slopes analyses showed Sociotropy to be more strongly related to Depression at low use of Problem-Solving (b = .22, SE_b = .07, p < .01) than at high use of Problem-Solving (b = .20, SE_b = .08, p < .01).
PANAS-X Positive	ΔR^2 = .12, $F(5, 307)$ = 8.33, p < .001	Sociotropy, b = -.15, SE_b = .06, p < .01 Problem-Solving, b = .28, SE_b = .06, p < .001
Life Satisfaction	ΔR^2 = .12, $F(5, 307)$ = 8.08, p < .001	Sociotropy, b = -.18, SE_b = .06, p < .01 Problem-Solving, b = .20, SE_b = .06, p < .001 Problem-Solving x Sociotropy, b = .15, SE_b = .05, p < .01 Simple slopes analyses showed Sociotropy to be more strongly related to Life Satisfaction at low use of Problem-Solving (b = -.25, SE_b = .07, p < .001) than at high use of Problem-Solving (b = -.06, SE_b = .08, *ns*). Problem-Solving x Autonomy, b = -.13, SE_b = .05, p < .05 Simple slopes analyses *ns.*

Table 7 (Continued)

Summary of significant findings from multiple regression analyses for adaptive strategies within achievement context.

Criterion	Significant Main Results	Significant Follow-Up Findings
Predictors = Cognitive Reappraisal, Sociotropy, Autonomy, Cognitive Reappraisal x Sociotropy, Cognitive Reappraisal x Autonomy.		
Depression	ΔR^2 = .13, $F(5, 307)$ = 13.25, p < .001	Sociotropy, b = .28, SE_b = .05, p < .001 Cognitive Reappraisal, b = -.18, SE_b = -.18, p = .001 Cognitive Reappraisal x Sociotropy, b = -.18, SE_b = .05, p = .001. Simple slopes analyses showed Sociotropy to be more strongly related to Depression at low use of Cognitive Reappraisal (b = .44, SEb = .06, p < .001) than at high use of Cognitive Reappraisal (b = .17, SE_b = .07, p < .05).
PANAS-X Positive	ΔR^2 = .10, $F(5, 307)$ = 7.09, p < .001	Sociotropy, b = -.22, SE_b = .06, p < .001. Cognitive Reappraisal, b = .18, SE_b = .06, p = .001. Cognitive Reappraisal x Sociotropy, b = -.13, SE_b = .05, p < .05. Simple slopes analyses showed Sociotropy to be more strongly related to PANAS Positive at high use of Cognitive Reappraisal (b = -.35, SE_b = .08, p < .001) than at low use of Cognitive Reappraisal (b = -.07, SE_b = .07, *ns*).
Life Satisfaction	ΔR^2 = .06, $F(5, 307)$ = 4.10, p = .001	Sociotropy, b = -.22, SE_b = .06, p = .001 Cognitive Reappraisal, b = .13, SE_b = .06, p = .05

Table 8

Summary of significant findings from multiple regression analyses for maladaptive strategies within achievement context.

Criterion	Significant Main Results	Significant Follow-Up Findings
Predictors Self-Criticism, Sociotropy, Autonomy, Self-Criticism x Sociotropy, Self-Criticism x Autonomy.		
Depression	ΔR^2 = .16, F(5, 307) = 11.85, p < .001	Sociotropy, b = .24, SE_b = .06, p = .001 Self-Criticism, b = .19, SE_b = .06, p = .01
PANAS-X Positive	ΔR^2 = .06, F(5, 307) = 4.19, p = .001.	Sociotropy, b = -.15, SE_b = .07, p = .05 Self-Criticism, b = -.15, SE_b = .06, p = .05
Life Satisfaction	ΔR^2 = .07, F(5, 307) = 4.81, p < .001	Sociotropy, b = -.15, SE_b = .07, p = .05 Self-Criticism, b = -.18, SE_b = .06, p = .01
Predictors Expressive Suppression, Sociotropy, Autonomy, Expressive Suppression x Sociotropy, Expressive Suppression x Autonomy.		
Depression	ΔR^2 = .15, F(5, 307) = 10.59, p < .001	Sociotropy, b = .27, SE_b = .06, p < .001 Expressive Suppression, b = .15, SE_b = .06, p < .05
PANAS-X Positive	ΔR^2 = .07, F(5, 307) = 4.70, p < .001	Sociotropy, b = -.15, SE_b = .06, p < .05 Expressive Suppression, b = -.19, SE_b = .06, p < .01
Life Satisfaction	ΔR^2 = .08, F(5, 307) = 5.09, p < .001	Sociotropy, b = -.16, SE_b = .06, p = .01 Expressive Suppression, b = -.19, SE_b = .06, p < .05
Predictors Experiential Avoidance, Sociotropy, Autonomy, Experiential Avoidance x Sociotropy, Experiential Avoidance x Autonomy.		
Depression	ΔR^2 = .13, F(5, 307) = 9.53, p < .001	Sociotropy, b = -.12, SE_b = .05, p < .05 Experiential Avoidance x Sociotropy, b = -.12, SE_b = .05, p < .05 Simple slopes analyses showed Sociotropy to be more strongly related to depression at low use of Experiential Avoidance (b = .40, SE_b = .07, p < .001) than at high use of Experiential Avoidance (b = .19, SE_b = .08, p < .05).
PANAS-X Positive	ΔR^2 = .06, F(5, 307) = 3.97, p < .01	Sociotropy, b = -.17, SE_b = .06, p < .05
Life Satisfaction	ΔR^2 = .07, F(5, 307) = 4.41, p < .001	Sociotropy, b = -.17, SE_b = .06, p < .01 Experiential Avoidance b = -.12, SE_b = .06, p < .05
Predictors Worry/Rumination, Sociotropy, Autonomy, Worry/Rumination x Sociotropy, Worry/Rumination x Autonomy.		
Depression	ΔR^2 = .17, F(5, 307) = 12.43, p < .001	Sociotropy, b = .24, SE_b = .07, p < .001 Worry/Rumination, b = .18, SE_b = .06, p < .01 Worry/Rumination x Autonomy, b = .14, SE_b = .05, p < .01. Simple slopes analyses showed Autonomy to be more strongly related to Depression at high use of Worry/Rumination (b = .25, SE_b = .07, p = .001) than at low use of Worry/Rumination (b = -.004, SE_b = .07, *ns*).
PANAS-X Positive	ΔR^2 = .06, F(5, 307) = 3.98, p < .01	Sociotropy, b =-.17, SE_b = .07, p < .05
Life Satisfaction	ΔR^2 = .06, F(5, 307) = 3.88, p < .001	Sociotropy, b =-.17, SE_b = .07, p < .05

Appendix A

Main Study Package

RESEARCH QUESTIONNAIRE

Section A: This section asks for your demographic information. This is for statistical purposes so that we may know the composition of the people in the project.

Age: _____ Sex: Male / Female

Are you currently a student? Yes / No If yes, what is your educational level? _____

Are you currently employed? Yes/ No

Marital Status: Single / Common-law / Married / Divorced / Separated / Widowed

Ethnicity, check one:

___ Aboriginal
___ White, not of Hispanic origin (origins in Europe, North Africa, Middle East)
___ Black, not of Hispanic origin (origins in Africa)
___ Asian/Pacific Islander (origins in Far East, Southeast Asia, India Subcontinent, Pacific Islands)
___ Latino or Hispanic (Mexican, Puerto Rican, Cuban, Central or South America, or other Spanish culture or origin)
___ Other, please specify _____

Do you use alcohol on a regular basis? Yes / No

- if yes, how often do you use alcohol? _____

Do you use mood-altering drugs on a regular basis? Yes / No

- if yes, *what drug* and how *often*? _____

Please list all prescribed medication, over-the-counter drugs, and *supplements (e.g., St. John's Wort)* that you have had in the last 8 weeks:

Are you currently receiving or waiting to receive mental health assistance from a counselor, therapist, social worker, psychologist, or psychiatrist?

Yes ___ No ____

What diagnosis of a mental health disorder, if any, do you currently have?

No diagnosis __
Current diagnosis (please specify) _____

Section B. ***This questionnaire is about how you have been feeling during the past 2 weeks. After each question there are 5 statements (numbered 0–4). Read all 5 statements carefully. Then decide which one best describes how you have been feeling. Choose only one statement per group. If more than one statement in a group applies to you, choose the one with the higher number.***

(1) **During the past 2 weeks, have you been feeling sad or depressed?**

0 No, not at all.
1 Yes, a little bit.
2 Yes, I have felt sad or depressed most of the time.
3 Yes, I have been very sad or depressed nearly all the time.
4 Yes, I have been extremely depressed nearly all the time.

(2) **How many days in the past 2 weeks have you been feeling sad or depressed?**

0 No days
1 A few days
2 About half the days
3 Nearly every day
4 Every day

(3) **Which of the following best describes your level of interest in your usual activities during the past 2 weeks?**

0 I have not lost interest in my usual activities.
1 I have been less interested in 1 or 2 of my usual activities.
2 I have been less interested in several of my usual activities.
3 I have lost most of my interest in almost all of my usual activities.
4 I have lost all interest in all of my usual activities.

(4) **How many days in the past 2 weeks have you been less interested in your usual activities?**

0 No days
1 A few days
2 About half the days
3 Nearly every day
4 Every day

(5) **Which of the following best describes the amount of pleasure you have gotten from your usual activities during the past 2 weeks?**

0 I have gotten as much pleasure as usual.
1 I have gotten a little less pleasure from 1 or 2 of my usual activities.
2 I have gotten less pleasure from several of my usual activities.
3 I have gotten almost no pleasure from most of the activities that I usually enjoy.
4 I have gotten no pleasure from any of the activities that I usually enjoy.

(6) **How many days in the past 2 weeks have you gotten less pleasure from your usual activities?**

0 No days
1 A few days
2 About half the days
3 Nearly every day
4 Every day

(7) **During the past 2 weeks, has your energy level been low?**

0 No, not at all.
1 Yes, my energy level has occasionally been a little lower than it normally is.
2 Yes, I have clearly had less energy than I normally do.
3 Yes, I have had much less energy than I normally have.
4 Yes, I have felt exhausted almost all of the time.

(8) **Which of the following best describes your level of physical restlessness during the past 2 weeks?**
0 I have not been more restless and fidgety than usual.
1 I have been a little more restless and fidgety than usual.
2 I have been very fidgety, and it has been somewhat difficult to sit still.
3 I have been extremely fidgety, and I have been pacing a little bit almost every day.
4 I have been pacing more than an hour a day, and I have been unable to sit still.

(9) **Which of the following best describes your physical activity level during the past 2 weeks?**
0 I have not been moving more slowly than usual.
1 I have been moving a little more slowly than usual.
2 I have been moving more slowly than usual, and it takes me longer than usual to do most activities.
3 Normal activities are difficult because it has been tough to start moving.
4 I have been feeling extremely slowed down physically, like I am stuck in mud.

(10) **During the past 2 weeks, have you been bothered by feelings of guilt?**
0 No, not at all.
1 Yes, I have occasionally felt a little guilty.
2 Yes, I have often been bothered by feelings of guilt.
3 Yes, I have often been bothered by strong feelings of guilt.
4 Yes, I have been feeling extremely guilty.

(11) **During the past 2 weeks, what has your self esteem been like?**
0 My self-esteem has not been low.
1 Once in a while, my opinion of myself has been a little low.
2 I often think I am a failure.
3 I almost always think I am a failure.
4 I have been thinking I am a totally useless and worthless person.

(12) **During the past 2 weeks, have you been thinking about death or dying?**
0 No, not at all.
1 Yes, I have occasionally thought that life is not worth living.
2 Yes, I have frequently thought about dying in passive ways (such as going to sleep and not waking up).
3 Yes, I have frequently thought about death, and that others would be better off if I were dead.
4 Yes, I have been wishing I were dead.

(13) **During the past 2 weeks, have you been thinking about killing yourself?**
0 No, not at all.
1 Yes, I had a fleeting thought about killing myself.
2 Yes, several times I thought about killing myself, but I would not act on these thoughts.
3 Yes, I have been seriously thinking about killing myself.
4 Yes, I have thought of a specific plan for killing myself.

(14) **Which of the following best describes your ability to concentrate during the past 2 weeks?**
0 I have been able to concentrate as well as usual.
1 My ability to concentrate has been slightly worse than usual.
2 My attention span has not been as good as usual and I have had difficulty collecting my thoughts, but this hasn't caused any serious problems.
3 I have frequently had trouble concentrating, and it has interfered with my usual activities.
4 It has been so hard to concentrate that even simple things are hard to do.

(15) **During the past 2 weeks, have you had trouble making decisions?**
0 No, not at all.
1 Yes, making decisions has been slightly more difficult than usual.
2 Yes, it has been harder and has taken longer to make decisions, but I have been making them.
3 Yes, I have been unable to make some decisions that I would usually have been able to make.
4 Yes, important things are not getting done because I have had trouble making decisions.

(16) **During the past 2 weeks, has your appetite been decreased?**
- 0 No, not at all.
- 1 Yes, my appetite has been slightly decreased compared to how it normally is.
- 2 Yes, my appetite has been clearly decreased, but I have been eating about as much as I normally do.
- 3 Yes, my appetite has been clearly decreased, and I have been eating less than I normally do.
- 4 Yes, my appetite has been very bad, and I have had to force myself to eat even a little.

(17) **How much weight have you lost during the past 2 weeks (not due to dieting)?**
- 0 None (or the only weight I lost was due to dieting)
- 1 1–2 pounds
- 2 3–5 pounds
- 3 6–10 pounds
- 4 More than 10 pounds

(18) **During the past 2 weeks, has your appetite been increased?**
- 0 No, not at all.
- 1 Yes, my appetite has been slightly increased compared to how it normally is.
- 2 Yes, my appetite has clearly been increased compared to how it normally is.
- 3 Yes, my appetite has been greatly increased compared to how it normally is.
- 4 Yes, I have been feeling hungry all the time.

(19) **How much weight have you gained during the past 2 weeks?**
- 0 None
- 1 1–2 pounds
- 2 3–5 pounds
- 3 6–10 pounds
- 4 More than 10 pounds

(20) **During the past 2 weeks, have you been sleeping less than you normally do?**
- 0 No, not at all.
- 1 Yes, I have occasionally had slight difficulty sleeping.
- 2 Yes, I have clearly been sleeping less than I normally do.
- 3 Yes, I have been sleeping about half my normal amount of time.
- 4 Yes, I have been sleeping less than 2 hours a night.

(21) **During the past 2 weeks, have you been sleeping more than you normally do?**
- 0 No, not at all.
- 1 Yes, I have occasionally slept more than I normally do.
- 2 Yes, I have frequently slept at least 1 hour more than I normally do.
- 3 Yes, I have frequently slept at least 2 hours more than I normally do.
- 4 Yes, I have frequently slept at least 3 hours more than I normally do.

(22) **During the past 2 weeks, have you been feeling pessimistic or hopeless about the future?**
- 0 No, not at all.
- 1 Yes, I have occasionally felt a little pessimistic about the future.
- 2 Yes, I have often felt pessimistic about the future.
- 3 Yes, I have been feeling very pessimistic about the future most of the time.
- 4 Yes, I have been feeling that there is no hope for the future.

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0 = no difficulty 1 = mild difficulty 2 = moderate difficulty 3 = marked difficulty 4 = extreme difficulty

INSTRUCTIONS

Indicate below how much symptoms of depression have interfered with, or caused difficulties in, the following areas of your life during the past 2 weeks (Circle DNA [Does Not Apply] if you are not married or do not have a boyfriend/girlfriend.)

During the PAST 2 WEEKS, how much difficulty have symptoms of depression caused in your. . .

23. usual daily responsibilities (at a paid job, at home, or at school).....	0	1	2	3	4
24. relationship with your husband, wife, boyfriend, girlfriend, or lover .....DNA	0	1	2	3	4
25. relationships with close family members.....	0	1	2	3	4
26. relationships with your friends	0	1	2	3	4
27. participation and enjoyment in leisure and recreation activities	0	1	2	3	4

28. **Overall, how much have symptoms of depression interfered with or caused difficulties in your life?**
0 not at all
1 a little bit
2 a moderate amount
3 quite a bit
4 extremely

29. **How many days during the past 2 weeks were you <u>completely unable</u> to perform your usual daily responsibilities (at a paid job, at home, or at school) because you were feeling depressed? (circle one)**
0 days 1 day 2 days 3 days 4 days 5 days 6 days 7 days
8 days 9 days 10 days 11 days 12 days 13 days 14 days

---

0 = very satisfied 1 = mostly satisfied 2 = equally satisfied/dissatisfied 3 = mostly dissatisfied 4 = very dissatisfied

INSTRUCTIONS
Indicate below your level of satisfaction with the following areas of your life (Circle DNA [Does Not Apply] if you are not married or do not have a boyfriend or girlfriend.)

During the PAST 2 WEEKS how satisfied have you been with your. . .

30. usual daily responsibilities (at a paid job, at home, or at school).....	0	1	2	3	4
31. relationship with your husband, wife, boyfriend, girlfriend, or lover .....DNA	0	1	2	3	4
32. relationship with close family members	0	1	2	3	4
33. relationships with your friends	0	1	2	3	4
34. participation and enjoyment in leisure and recreation activities	0	1	2	3	4
35. mental health.....	0	1	2	3	4
36. physical health	0	1	2	3	4

37. **In general, how satisfied have you been with your life during the past 2 weeks?**
0 very satisfied
1 mostly satisfied
2 equally satisfied & dissatisfied
3 mostly dissatisfied
4 very dissatisfieded

38. **In general, how would you rate your overall quality of life during the past 2 weeks?**
0 very good, my life could hardly be better
1 pretty good, most things are going well
2 the good and bad parts are about equal
3 pretty bad, most things are going poorly
4 very bad, my life could hardly be worse

Addendum items:

When you consider how you have been feeling the past 2 weeks, do you think it is related to

39. the death of a person or animal close to you? NO / YES

40. a medical condition you presently have? NO / YES
41. your use of medication, drugs or alcohol? NO / YES

Section C: This scale consists of a number of words and phrases that describe different feelings and emotions. Read each item and then mark the appropriate answer. Indicated <u>to what extent you have felt this way during the past few weeks.</u>

1 very slightly or not at all	2 a little	3 moderately	4 quite a bit	5 extremely
_____cheerful	_____sad	_____active	_____angry at self	
_____disgusted	_____calm	_____guilty	_____enthusiastic	
_____attentive	_____afraid	_____joyful	_____downhearted	
_____bashful	_____tired	_____nervous	_____sheepish	
_____sluggish	_____amazed	_____lonely	_____distressed	
_____daring	_____shaky	_____sleepy	_____blameworthy	
_____surprised	_____happy	_____excited	_____determined	
_____strong	_____timid	_____hostile	_____frightened	
_____scornful	_____alone	_____proud	_____astonished	
_____relaxed	_____alert	_____jittery	_____interested	
_____irritable	_____upset	_____lively	_____loathing	
_____delighted	_____angry	_____ashamed	_____confident	
_____inspired	_____bold	_____at ease	_____energetic	
_____fearless	_____blue	_____scared	_____concentrating	
_____disgusted with self	_____shy	_____drowsy	_____dissatisfied with self	

Section D: Below are five statements with which you may agree or disagree. Using the scale below, indicate your agreement with each item by placing the appropriate response. Please be open and honest in your responding.

1 = Strongly Disagree
2 = Disagree
3 = Slightly Disagree
4 = Neither Agree or Disagree
5 = Slightly Agree
6 = Agree
7 = Strongly Agree

_____1. In most ways my life is close to my ideal.
_____2. The conditions of my life are excellent.
_____3. I am satisfied with life.
_____4. So far I have gotten the important things I want in life.
_____5. If I could live my life over, I would change almost nothing.

Section E: ***Instructions: Please try to vividly imagine yourself in each of these situations or sequences of events that follow. Picture each situation as clearly as you can and as if the events are happening to you right now. Place yourself in each situation and (i) rate the intensity and valence (positive or negative) of your feelings. Then (ii) decide the extent to which you would respond to each situation by answering the questions that follow.***

1. You take an exam and receive a low grade on it.

(a) How would you generally feel about receiving a low grade:

-5	*-4*	*-3*	*-2*	*-1*	*0*	*1*	*2*	*3*	*4*	*5*
Extremely negative					*NEUTRAL*					*Extremely positive*

(b) To what extent would you respond to this situation and your feelings in each the following ways?

Acceptance = allow or accept your feelings

0	*1*	*2*	*3*	*4*
Not at all				*A lot*

Problem-solving = come up with ideas to change the situation or fix the problem

0	*1*	*2*	*3*	*4*
Not at all				*A lot*

Cognitive reappraisal = think of the situation differently in order to change how you feel

0	*1*	*2*	*3*	*4*
Not at all				*A lot*

Self-criticism = criticize yourself for your feelings

0	*1*	*2*	*3*	*4*
Not at all				*A lot*

Expressive suppression or hiding feelings = hide your feelings from others

0	*1*	*2*	*3*	*4*
Not at all				*A lot*

Experiential avoidance = push down your feelings or put them out of your mind

0	*1*	*2*	*3*	*4*
Not at all				*A lot*

Worry/rumination = worry, ruminate, or dwell about your feelings and the situation

0	*1*	*2*	*3*	*4*
Not at all				*A lot*

2. You don't have a boy/girlfriend (or spouse) although you want one

(a) How would you generally feel about not having a boy/girlfriend (or spouse) although you want one:

-5 -4 -3 -2 -1 0 1 2 3 4 5
Extremely negative *NEUTRAL* *Extremely positive*

(b) To what extent would you respond to this situation and your feelings in each the following ways?

Acceptance = allow or accept your feelings
0 1 2 3 4
Not at all *A lot*

Problem-solving = come up with ideas to change the situation or fix the problem
0 1 2 3 4
Not at all *A lot*

Cognitive reappraisal = think of the situation differently in order to change how you feel
0 1 2 3 4
Not at all *A lot*

Self-criticism = criticize yourself for your feelings
0 1 2 3 4
Not at all *A lot*

Expressive suppression or hiding feelings = hide your feelings from others
0 1 2 3 4
Not at all *A lot*

Experiential avoidance = push down your feelings or put them out of your mind
0 1 2 3 4
Not at all *A lot*

Worry/rumination = worry, ruminate, or dwell about your feelings and the situation
0 1 2 3 4
Not at all *A lot*

3. A friend comes to you with a problem, and you are not as helpful as you would like to be

(a) How would you generally feel about not being as helpful as you would like to be:

-5	*-4*	*-3*	*-2*	*-1*	*0*	*1*	*2*	*3*	*4*	*5*
Extremely negative					*NEUTRAL*					*Extremely positive*

(b) To what extent would you respond to this situation and your feelings in each the following ways?

Acceptance = allow or accept your feelings

0	*1*	*2*	*3*	*4*
Not at all				*A lot*

Problem-solving = come up with ideas to change the situation or fix the problem

0	*1*	*2*	*3*	*4*
Not at all				*A lot*

Cognitive reappraisal = think of the situation differently in order to change how you feel

0	*1*	*2*	*3*	*4*
Not at all				*A lot*

Self-criticism = criticize yourself for your feelings

0	*1*	*2*	*3*	*4*
Not at all				*A lot*

Expressive suppression or hiding feelings = hide your feelings from others

0	*1*	*2*	*3*	*4*
Not at all				*A lot*

Experiential avoidance = push down your feelings or put them out of your mind

0	*1*	*2*	*3*	*4*
Not at all				*A lot*

Worry/rumination = worry, ruminate, or dwell about your feelings and the situation

0	*1*	*2*	*3*	*4*
Not at all				*A lot*

4. As an assignment, you give an important talk in class, and the class reacts negatively

(a) How would you generally feel about the class reacting negatively to your important talk:

-5 -4 -3 -2 -1 0 1 2 3 4 5
Extremely negative *NEUTRAL* *Extremely positive*

(b) To what extent would you respond to this situation and your feelings in each the following ways?

Acceptance = allow or accept your feelings
0 1 2 3 4
Not at all *A lot*

Problem-solving = come up with ideas to change the situation or fix the problem
0 1 2 3 4
Not at all *A lot*

Cognitive reappraisal = think of the situation differently in order to change how you feel
0 1 2 3 4
Not at all *A lot*

Self-criticism = criticize yourself for your feelings
0 1 2 3 4
Not at all *A lot*

Expressive suppression or hiding feelings = hide your feelings from others
0 1 2 3 4
Not at all *A lot*

Experiential avoidance = push down your feelings or put them out of your mind
0 1 2 3 4
Not at all *A lot*

Worry/rumination = worry, ruminate, or dwell about your feelings and the situation
0 1 2 3 4
Not at all *A lot*

5. Your parents have been treating you in a negative way

(a) How would you generally feel about your parents treating you in a negative way:

-5	-4	-3	-2	-1	0	1	2	3	4	5
Extremely negative					*NEUTRAL*					*Extremely positive*

(b) To what extent would you respond to this situation and your feelings in each the following ways?

Acceptance = allow or accept your feelings

0	1	2	3	4
Not at all				*A lot*

Problem-solving = come up with ideas to change the situation or fix the problem

0	1	2	3	4
Not at all				*A lot*

Cognitive reappraisal = think of the situation differently in order to change how you feel

0	1	2	3	4
Not at all				*A lot*

Self-criticism = criticize yourself for your feelings

0	1	2	3	4
Not at all				*A lot*

Expressive suppression or hiding feelings = hide your feelings from others

0	1	2	3	4
Not at all				*A lot*

Experiential avoidance = push down your feelings or put them out of your mind

0	1	2	3	4
Not at all				*A lot*

Worry/rumination = worry, ruminate, or dwell about your feelings and the situation

0	1	2	3	4
Not at all				*A lot*

6. Your grade point average (GPA) for the semester is low

(a) How would you generally feel about your low GPA this semester:

-5	-4	-3	-2	-1	0	1	2	3	4	5
Extremely negative					*NEUTRAL*					*Extremely positive*

(b) To what extent would you respond to this situation and your feelings in each the following ways?

Acceptance = allow or accept your feelings

0	1	2	3	4
Not at all				*A lot*

Problem-solving = come up with ideas to change the situation or fix the problem

0	1	2	3	4
Not at all				*A lot*

Cognitive reappraisal = think of the situation differently in order to change how you feel

0	1	2	3	4
Not at all				*A lot*

Self-criticism = criticize yourself for your feelings

0	1	2	3	4
Not at all				*A lot*

Expressive suppression or hiding feelings = hide your feelings from others

0	1	2	3	4
Not at all				*A lot*

Experiential avoidance = push down your feelings or put them out of your mind

0	1	2	3	4
Not at all				*A lot*

Worry/rumination = worry, ruminate, or dwell about your feelings and the situation

0	1	2	3	4
Not at all				*A lot*

7. At a party, people don't act interested in you

(a) How would you generally feel about people being not interested in you:

-5	-4	-3	-2	-1	0	1	2	3	4	5
Extremely negative					*NEUTRAL*					*Extremely positive*

(b) To what extent would you respond to this situation and your feelings in each the following ways?

Acceptance = allow or accept your feelings

0	1	2	3	4
Not at all				*A lot*

Problem-solving = come up with ideas to change the situation or fix the problem

0	1	2	3	4
Not at all				*A lot*

Cognitive reappraisal = think of the situation differently in order to change how you feel

0	1	2	3	4
Not at all				*A lot*

Self-criticism = criticize yourself for your feelings

0	1	2	3	4
Not at all				*A lot*

Expressive suppression or hiding feelings = hide your feelings from others

0	1	2	3	4
Not at all				*A lot*

Experiential avoidance = push down your feelings or put them out of your mind

0	1	2	3	4
Not at all				*A lot*

Worry/rumination = worry, ruminate, or dwell about your feelings and the situation

0	1	2	3	4
Not at all				*A lot*

8. You can't get all the work done that others expect of you

(a) How would you generally feel about not getting all the work done that others expect of you:

-5 -4 -3 -2 -1 0 1 2 3 4 5
Extremely negative *NEUTRAL* *Extremely positive*

(b) To what extent would you respond to this situation and your feelings in each the following ways?

Acceptance = allow or accept your feelings
0 1 2 3 4
Not at all *A lot*

Problem-solving = come up with ideas to change the situation or fix the problem
0 1 2 3 4
Not at all *A lot*

Cognitive reappraisal = think of the situation differently in order to change how you feel
0 1 2 3 4
Not at all *A lot*

Self-criticism = criticize yourself for your feelings
0 1 2 3 4
Not at all *A lot*

Expressive suppression or hiding feelings = hide your feelings from others
0 1 2 3 4
Not at all *A lot*

Experiential avoidance = push down your feelings or put them out of your mind
0 1 2 3 4
Not at all *A lot*

Worry/rumination = worry, ruminate, or dwell about your feelings and the situation
0 1 2 3 4
Not at all *A lot*

9. You apply for admission into graduate or professional schools but don't get accepted at any you want to attend

(a) How would you generally feel about not getting accepted to any schools you want to attend:

-5	-4	-3	-2	-1	0	1	2	3	4	5
Extremely negative					*NEUTRAL*					*Extremely positive*

(b) To what extent would you respond to this situation and your feelings in each the following ways?

Acceptance = allow or accept your feelings

0	1	2	3	4
Not at all				*A lot*

Problem-solving = come up with ideas to change the situation or fix the problem

0	1	2	3	4
Not at all				*A lot*

Cognitive reappraisal = think of the situation differently in order to change how you feel

0	1	2	3	4
Not at all				*A lot*

Self-criticism = criticize yourself for your feelings

0	1	2	3	4
Not at all				*A lot*

Expressive suppression or hiding feelings = hide your feelings from others

0	1	2	3	4
Not at all				*A lot*

Experiential avoidance = push down your feelings or put them out of your mind

0	1	2	3	4
Not at all				*A lot*

Worry/rumination = worry, ruminate, or dwell about your feelings and the situation

0	1	2	3	4
Not at all				*A lot*

10. During the first year of working in the career of your choice, you receive a negative evaluation of your job performance from your employer

(a) How would you generally feel about receiving a negative evaluation of your job performance:

-5	-4	-3	-2	-1	0	1	2	3	4	5
Extremely negative					*NEUTRAL*					*Extremely positive*

(b) To what extent would you respond to this situation and your feelings in each the following ways?

Acceptance = allow or accept your feelings

0	1	2	3	4
Not at all				*A lot*

Problem-solving = come up with ideas to change the situation or fix the problem

0	1	2	3	4
Not at all				*A lot*

Cognitive reappraisal = think of the situation differently in order to change how you feel

0	1	2	3	4
Not at all				*A lot*

Self-criticism = criticize yourself for your feelings

0	1	2	3	4
Not at all				*A lot*

Expressive suppression or hiding feelings = hide your feelings from others

0	1	2	3	4
Not at all				*A lot*

Experiential avoidance = push down your feelings or put them out of your mind

0	1	2	3	4
Not at all				*A lot*

Worry/rumination = worry, ruminate, or dwell about your feelings and the situation

0	1	2	3	4
Not at all				*A lot*

11. Your relationship with your boy/girlfriend (or spouse) ends even though you would like it to continue

(a) How would you generally feel about your relationship ending even though you want it to continue:

-5 -4 -3 -2 -1 0 1 2 3 4 5
Extremely negative *NEUTRAL* *Extremely positive*

(b) To what extent would you respond to this situation and your feelings in each the following ways?

Acceptance = allow or accept your feelings
0 1 2 3 4
Not at all *A lot*

Problem-solving = come up with ideas to change the situation or fix the problem
0 1 2 3 4
Not at all *A lot*

Cognitive reappraisal = think of the situation differently in order to change how you feel
0 1 2 3 4
Not at all *A lot*

Self-criticism = criticize yourself for your feelings
0 1 2 3 4
Not at all *A lot*

Expressive suppression or hiding feelings = hide your feelings from others
0 1 2 3 4
Not at all *A lot*

Experiential avoidance = push down your feelings or put them out of your mind
0 1 2 3 4
Not at all *A lot*

Worry/rumination = worry, ruminate, or dwell about your feelings and the situation
0 1 2 3 4
Not at all *A lot*

12. A person with whom you really want to be friends does not want to be friends with you

(a) How would you generally feel about a person not wanting to be friends with you:

-5 -4 -3 -2 -1 0 1 2 3 4 5
Extremely negative *NEUTRAL* *Extremely positive*

(b) To what extent would you respond to this situation and your feelings in each the following ways?

Acceptance = allow or accept your feelings
0 1 2 3 4
Not at all *A lot*

Problem-solving = come up with ideas to change the situation or fix the problem
0 1 2 3 4
Not at all *A lot*

Cognitive reappraisal = think of the situation differently in order to change how you feel
0 1 2 3 4
Not at all *A lot*

Self-criticism = criticize yourself for your feelings
0 1 2 3 4
Not at all *A lot*

Expressive suppression or hiding feelings = hide your feelings from others
0 1 2 3 4
Not at all *A lot*

Experiential avoidance = push down your feelings or put them out of your mind
0 1 2 3 4
Not at all *A lot*

Worry/rumination = worry, ruminate, or dwell about your feelings and the situation
0 1 2 3 4
Not at all *A lot*

Section F: Please indicate the percentage of time in which the statement applies to you

1. I would be uncomfortable dining out in a restaurant by myself.

   0% 25% 50% 75% 100%

2. I get uncomfortable when I am not sure how I am expected to behave in the presence of other people.

   0% 25% 50% 75% 100%

3. I focus almost exclusively on the positive outcomes of my decisions.

   0% 25% 50% 75% 100%

4. It is important to be liked and approved of by others.

   0% 25% 50% 75% 100%

5. I feel more comfortable helping others than receiving help.

   0% 25% 50% 75% 100%

6. I am very uncomfortable when a close friend or family member decides to "pour their heart out" to me.

   0% 25% 50% 75% 100%

7. I am reluctant to ask for help when working on a difficult and puzzling task.

   0% 25% 50% 75% 100%

8. When I am with other people, I look for signs whether or not they like being with me.

   0% 25% 50% 75% 100%

9. When visiting people, I get fidgety when sitting around talking and would rather get up and do something.

   0% 25% 50% 75% 100%

10. I am more concerned that people like me than I am about making important achievements.

    0% 25% 50% 75% 100%

11. I am afraid of hurting other people's feelings.

    0% 25% 50% 75% 100%

12. People rarely come to me with their personal problems.

    0% 25% 50% 75% 100%

13. I sometimes unintentionally hurt the people I love the most by what I say.

    0% 25% 50% 75% 100%

14. I feel bad if I do not have some social plans for the weekend.

    0% 25% 50% 75% 100%

15. I tend to be direct with people and say what I think.

    0% 25% 50% 75% 100%

16. People tend to dwell too much on their personal problems.

    0% 25% 50% 75% 100%

17. Once I've arrived at a decision, I rarely change my mind.

    0% 25% 50% 75% 100%

18. Being able to share experiences with other people makes them much more enjoyable for me.

    0% 25% 50% 75% 100%

19. I do things that are not in my best interest in order to please others.

    0% 25% 50% 75% 100%

20. I prefer to "work out" my personal problems by myself.

    0% 25% 50% 75% 100%

21. When I have a problem, I like to go off on my own and think it through rather than being influenced by others.

    0% 25% 50% 75% 100%

22. I find it hard to pay attention to a long conversation, even with friends.

    0% 25% 50% 75% 100%

23. I get lonely when I am at home by myself at night.

    0% 25% 50% 75% 100%

24. The worst part about growing old is being left alone.

    0% 25% 50% 75% 100%

25. Having close bonds with other people makes me feel secure.

    0% 25% 50% 75% 100%

26. My close friends and family are too sensitive to what others say.

    0% 25% 50% 75% 100%

27. I am concerned that if people knew my faults or weaknesses they would not like me.

    0% 25% 50% 75% 100%

28. I set my own standards and goals for myself rather than accepting those of other people.

    0% 25% 50% 75% 100%

29. I worry that somebody I love will die.

    0% 25% 50% 75% 100%

30. If a goal is important to me I will pursue it even if it may make other people uncomfortable.

    0% 25% 50% 75% 100%

31. I find it difficult to say “no” to other people.

    0% 25% 50% 75% 100%

32. I censor what I say because I am concerned that the other person may disapprove or disagree.

    0% 25% 50% 75% 100%

33. I am usually the last person to hear that I’ve hurt someone by my actions.

    0% 25% 50% 75% 100%

34. I often find myself thinking about friends or family.

    0% 25% 50% 75% 100%

35. I would rather take personal responsibility for getting the job done than depend on someone else.

    0% 25% 50% 75% 100%

36. If a friend has not called for a while I worry that he or she has forgotten me.

    0% 25% 50% 75% 100%

37. I spend a lot of time thinking over my decisions.

    0% 25% 50% 75% 100%

38. It is important to me to be free and independent.

    0% 25% 50% 75% 100%

39. People I work with often spend too much time weighing out the “pros” and “cons” before taking action.

    0% 25% 50% 75% 100%

40. When I am having difficulty solving a problem, I would rather work it out for myself than have someone else show me the solution.

    0% 25% 50% 75% 100%

41. Often I fail to consider the possible negative consequences of my actions.

    0% 25% 50% 75% 100%

42. When I achieve a goal I get more satisfaction from reaching the goal than from any praise I might get.

    0% 25% 50% 75% 100%

43. If I think I am right about something, I feel comfortable expressing myself even if others don’t like it.

    0% 25% 50% 75% 100%

44. I am uneasy when I cannot tell whether someone I’ve met likes me.

    0% 25% 50% 75% 100%

45. If somebody criticizes my appearance, I feel like I am not attractive to other people.

    0% 25% 50% 75% 100%

46. I get uncomfortable around a person who does not clearly like me.

    0% 25% 50% 75% 100%

47. It is more important to be active and doing things than having close relations with other people.

    0% 25% 50% 75% 100%

48. Sometimes I hurt family and close friends without knowing I’ve done anything wrong.

    0% 25% 50% 75% 100%

49. I tend to fret and worry over my personal problems.

    0% 25% 50% 75% 100%

50. The possibility of being rejected by others for standing up for rights would not stop me.

    0% 25% 50% 75% 100%

51. I need to be engaged in a challenging task in order to feel satisfied with my life.

    0% 25% 50% 75% 100%

52. I don't enjoy what I am doing when I don't feel that someone in my life really cares about me.

    0% 25% 50% 75% 100%

53. I like to be certain that there is somebody close I can contact in case something unpleasant happens to me.

    0% 25% 50% 75% 100%

54. It would not be much fun for me to travel to a new place all alone.

    0% 25% 50% 75% 100%

55. I am more apologetic to others than I need to be.

    0% 25% 50% 75% 100%

56. I prize being a unique individual more than being a member of a group.

    0% 25% 50% 75% 100%

57. If I think somebody may be upset at me, I want to apologize.

    0% 25% 50% 75% 100%

58. I become particularly annoyed when a task is not completed.

    0% 25% 50% 75% 100%

59. I find it difficult to be separated from people I love.

    0% 25% 50% 75% 100%

Appendix B

Recruitment Advertisement for Research Questionnaire

How does your cognitive personality and coping styles affect your mood and mental health?

We would like to find out. The Department of Psychology at Lakehead University is currently inviting individuals ***18 years or older*** to fill out an online research self-report that examines this question. To learn more about the study or to participate, please go to [https://www.surveymonkey.com/s/XLLC2XM]. If you have questions or prefer to fill out a paper copy of the self-report, please contact Alana (ajrawana@lakeheadu.ca) or leave a message for her at 343-8168. All responses are anonymous and participation is completely voluntary. Random prize draws for 4 VISA gift cards of $25 each will be held for all participants to say "thank you". We will also share a summary of our findings with you upon request.

cbtc
Lakehead University, Thunder Bay

https://www.surveymonkey.com/s/XLLC2XM
https://www.surveymonkey.com/s/XLLC2XM
https://www.surveymonkey.com/s/XLLC2XM
https://www.surveymonkey.com/s/XLLC2XM
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https://www.surveymonkey.com/s/XLLC2XM

Appendix C

Newspaper Recruitment Advertisement for Research Questionnaire

Recruiting research participants for Psychology research

You are invited to participate in a psychology study called "COGNITIVE PERSONALITY, COPING STYLES, MOOD, AND MENTAL HEALTH STUDY". We are seeking individuals 18 years or older to complete a questionnaire that can be taken electronically online. If you would like to learn more about the study or complete the questionnaire online, please go to https://www.surveymonkey.com/s/XLLC2XM

All responses are anonymous and participation is completely voluntary. Random prize draws for 4 VISA gift cards of $25 each will be held for all participants to say "thank you". We will also share a summary of our findings with you upon request.

This study has been reviewed and approved by Lakehead University Research Ethics Board.

If you have any questions regarding this study please email Alana Rawana at ajrawana@lakeheadu.ca. The project supervisor is Dr. J. Tan, jtan@lakeheadu.ca.

Appendix D

Cover Page for Research Questionnaire

PERSONALITY, COPING STYLES, MOOD, AND MENTAL HEALTH (2012-2013)

Thank you for your interest in our study. Before we begin, we would like to offer you some important information to help you make an informed decision as to whether or not you would like to continue in this project.

This study is being conducted by Alana Rawana (ajrawana@lakeheadu.ca) who is an MA Clinical Psychology student and her thesis advisor Dr. Josephine Tan (jtan@lakeheadu.ca, 346-7751).

The objective of the study is to see how coping styles and personality relate to people's moods and their mental health. All you have to do is to complete an online research questionnaire that contains very clear instructions. It will take you about 1 hour or less to get through it.

Please know that your participation in this study is strictly voluntary. What this means is that you are free to withdraw from the study any time without explanation or penalty, may choose not to answer specific questions or answer in as much or as little detail as you wish.

If you choose to participate, your responses will be kept confidential and anonymous. There are no foreseeable physical or psychological risks or benefits to you for participating in this study. All data collected will remain in secure storage in Dr. Tan's lab for a period of 5 years after which time they will be destroyed.

Everyone who participates will be entered into a random prize draw for the chance to win one of four $25 VISA gift cards. Also, if you are an Introductory Psychology student at Lakehead University Thunder Bay campus, you will be eligible to receive 1 bonus point towards your final course grade.

Would you be interested in knowing the results of our study after we are done? If yes, there is an option to make such a request and we will be pleased to share our findings with you.

If you still have any questions after reading this, please contact Alana Rawana (ajrawana@lakeheadu.ca) or leave a message for her at 343-8168. You can also reach the project supervisor, Dr. Josephine Tan at jtan@lakeheadu.ca or 346-7751.

If you prefer to take part in this study by filling in a hard copy of the questionnaire, please let us know. We would be pleased to supply with you a copy.

If you still wish to continue with this online study, please click on the PROCEED button below.

PROCEED

This project has been approved by the Research Ethics Board (REB) at Lakehead University (see below for REB contact information).

Office of Research
Lakehead University
955 Oliver Road
Thunder Bay, ON P7B 5E1
Tel: (807) 343-8283
Fax: (807) 343-7749

Appendix E

Consent Form for Online Research Questionnaire

INFORMED CONSENT FORM (2012-2013)
Online Screening

Title of Research: PERSONALITY, COPING STYLES, MOOD, AND MENTAL HEALTH (2012-2013)

Researchers: Alana Rawana (MA Student)
Dr. Josephine Tan (supervisor)

Aim of Study: The aim of this study is to investigate how coping styles and personality relate to people's moods and mental health.

Procedure: In this study you will be completing an online survey that asks you questions about how you deal with different problematic situations, how you feel about yourself and your life, and your moods and mental health. This survey should take you no more than one hour to complete.

Risks/Benefits: There are no foreseeable physical or psychological harm to you as a result of participating in the study. All participants in the study will be entered into a random prize draw for a chance to win one of four $25.00 VISA gift cards. You will be able to request for a copy of the summary of the results when the study has been completed. Lakehead University Introductory Psychology students will receive 1 bonus point to go towards their final course grade.

Confidentiality: All data collected will be kept confidential, downloaded and securely stored in Dr. Tan's lab for a period of 5 years, after which time it will be destroyed.

Voluntary Nature: Your participation is strictly voluntary. You are free to withdraw from the study at any time you want without explanation or penalty.

Please note that by completing the online questionnaire and submitting it, you are indicating that you have read and understood the above information and that you participate in the study on a voluntary basis.

We need your name and contact information so that we can reach you if you win a gift certificate in the random prize draw that is expected to be held in the late summer 2013:

Name:
Mailing address:
Postal code:

Tel number we can reach you at:
Email address we can reach you at:

If you are an Introductory Psychology student at Lakehead University, you are entitled to 1 bonus mark towards your course. Please provide us with the information below so that we can make sure that you receive your credit.

Student ID number:

Professor's name:

If you wish to receive a summary copy of the results when the study has been completed, please provide us with your email address or mailing address below. We anticipate that the results will be available towards the end of the summer in 2013.

To start the study, please click on the PROCEED button below. This will bring you to a different weblink that contains the Research Questionnaire so that your responses will not be associated with your personal information on this page and can be kept anonymous.

PROCEED

Appendix F

Consent form for Hard Copy Research Questionnaire

INFORMED CONSENT FORM (2012-2013)
Paper Copy Screening

Title of Research: PERSONALITY, COPING STYLES, MOOD, AND MENTAL HEALTH (2012-2013)

Researchers: Alana Rawana (MA Student)
Dr. Josephine Tan (supervisor)

Aim of Study: The aim of this study is to investigate how coping styles and personality relate to people's moods and mental health.

Procedure: In this study you will be completing an online survey that asks you questions about how you deal with different problematic situations, how you feel about yourself and your life, and your moods and mental health. This survey should take you no more than one hour to complete.

Risks/Benefits: There are no foreseeable physical or psychological harm to you as a result of participating in the study. All participants in the study will be entered into a random prize draw for a chance to win one of four $25.00 VISA gift cards. You will be able to request for a copy of the summary of the results when the study has been completed. Lakehead University Introductory Psychology students will receive 1 bonus point to go towards their final course grade.

Confidentiality: All data collected will be kept confidential, downloaded and securely stored in Dr. Tan's lab for a period of 5 years, after which time it will be destroyed.

Voluntary Nature: Your participation is strictly voluntary. You are free to withdraw from the study at any time you want without explanation or penalty.

If you have read and understood the above information, and wish to participate in this study, please sign below to indicate your full informed consent.

_____	_____	_____
Printed name here	Sign name here	Date here

We need your name and contact information so that we can reach you if you win a gift certificate in the random prize draw that is expected to be held in the late summer 2013:

_____

_____

_____

If you are an Introductory Psychology student at Lakehead University, you are entitled to 1 bonus mark towards your course. Please provide us with the information below so that we can make sure that you receive your credit.

_____
Student ID number

_____
Professor's name

If you wish to receive a summary copy of the results when the study has been completed, please provide us with your email address or mailing address below. We anticipate that the results will be available towards the end of the summer in 2013.

To maintain your anonymity, your consent form will be detached from the research questionnaire upon receipt.

Appendix G

Debriefing for Study and Therapy Resources in Thunder Bay

Debriefing Form for the Main Study
PERSONALITY, COPING STYLES, MOOD, AND MENTAL HEALTH (2012-2013)

Are you done with the research questionnaire? If no, please go back and finish up the questionnaire before reading this page.

If you are done with the questionnaire, then please read on. This a debriefing page in which we would like to offer you more details for your own information and see if you have any questions for us. We were not able provide you with a lot of information about the study before because we did not want the information to influence your responses in light of what you think we expected to find.

The objective of our study is to investigate the cognitive personality styles in relation to emotion regulation and mood. It is known that some individuals put greater emphasis on intimacy, affiliation, and dependency (sociotropic personality style) while some focus on goal achievement and independence (autonomous personality style) more than others. Those with a sociotropic personality style are likely to show greater distress in negative social events than negative nonsocial events. Those with an autonomous personality style tend to display greater degrees of distress when faced with negative achievement events compared to negative nonachievement events. These personality styles may therefore predict individuals' moods depending on the type of negative situations that the persons are in.

Emotion regulation refers to the process of changing emotions or the situations that elicit the emotions so that one can respond appropriately to the situation. There are different types of emotion regulation strategies (or coping styles) that people use, such as problem-solving, accepting how one feels, changing the way one thinks, criticizing one's self, hiding one's feelings from others, pushing down one's feelings or putting them out of mind, and worrying or dwelling on problems. Some of these strategies are helpful to promote mental health while others tend to promote negative moods and may be linked to the development of psychological distress, including depression. Research shows that people tend to use the non-helpful strategies more consistently across situations but show some variability in the use of helpful strategies across situations. Why this is so is not clear. We think that it might have something to do with their cognitive personality style. For example, perhaps sociotropic people who find negative interpersonal situations challenging might have more difficulty engaging in helpful emotion regulation strategies and consequently experience more negative moods and mental health problems.

We do not know how the results will turn out yet, but we do hope to have them ready towards the end of summer of 2013. If you had earlier requested a summary of the results a copy will be sent to you at the email or mailing address that you provided. If you did not and would like a copy, just email or call us – our contact information is at the bottom of this page.

We want to reassure you that your responses will be kept confidential and anonymous. We will be holding the draw for one of four $25 VISA gift cards in the spring. If you win, we will contact you.

If you are an Introductory Psychology student at Lakehead University Thunder Bay campus, you will be given one bonus point towards your final grade. If you have any questions about your bonus point, please do not contact your Introductory Psychology instructor because he or she will not be aware of how many research studies or which study you participated in. Instead please contact us if you have questions about this study.

Please do not mention this study to anyone. Many people have not yet participated in the study and we do not wish to influence their answers with the prior information. Our results will not be accurate in such a case, and the data will not be usable. We hope that you will cooperate with us in this regard.

Do you have any questions for us?
Please feel free to contact us:

Alana Rawana (ajrawana@lakeheadu.ca, 343-8168)
Dr. Josephine Tan (jtan@lakeheadu.ca, 346-7751)

Thank you for helping us with this project, it would not have been possible without your assistance. Below you will find a listing of community mental health resources that you can keep for your own information or relay to anyone who might be interested in the list.

Community Mental Health Resources

The city of Thunder Bay has therapy and counseling services that are available for individuals who require assistance coping with stress and regaining control of their lives. Issues may concern academic performance, personal relationships, mental health, occupational functioning, thoughts or intentions of harming one's self, etc. If you or anyone you know could use some assistance, please consider the following options:

- Mental Health Assessment Team – emergency services available from the Thunder Bay Regional Health Sciences Centre
- A family physician or walk-in clinic physician can be consulted for a referral to a mental health resource in the hospitals
- Student Health and Counseling Centre – free counseling for all LU students: located at UC 1007, (807) 343-8361
- Health Centre – mental health services available for all Confederation College students: located on main floor of the Regional Education Alliance for Community Heath **(**REACH**)** building, (807) 475-6169
- Thunder Bay Counseling Centre: counseling for individuals, couples, and families: (807) 684-1880
- Thunder Bay Crisis Response Service: (807) 346-8282
- Anishnawbe Mushkiki: Aboriginal Community Health Centre: (807) 343-4843
- Self-referral to any mental health professional in private practice (look up the Yellow Pages under *Psychologists and Psychological Associates; Psychotherapy; or Marriage, Family & individual Counselors*).
- More information is available at Thunder Bay Canadian Mental Health Association: (807) 345-5564