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COGNITIVE REAPPRAISAL AND EXPRESSIVE SUPPRESSION: AN EXAMINATION OF THEIR ASSOCIATIONS WITH SEEKING SOCIAL SUPPORT, WELL-BEING AND ACADEMIC PERFORMANCE

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College of Humanities & Social Sciences

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COGNITIVE REAPPRAISAL AND EXPRESSIVE SUPPRESSION:
AN EXAMINATION OF THEIR ASSOCIATIONS WITH SEEKING
SOCIAL SUPPORT, WELL-BEING AND ACADEMIC
PERFORMANCE

Khalid Abdulazem Mohamed Ahmed

This thesis is submitted in partial fulfilment of the requirements for the degree of
Master of Science in Clinical Psychology

Under the Supervision of Dr. Zahir Vally

April 2020
Declaration of Original Work

I, Khalid Abdulazem Mohamed Ahmed, the undersigned, a graduate student at the United Arab Emirates University (UAEU), and the author of this thesis entitled “Cognitive Reappraisal and Expressive Suppression: An Examination of Their Associations with Seeking Social Support, Well-Being and Academic Performance”, hereby, solemnly declare that this thesis is my own original research work that has been done and prepared by me under the supervision of Dr. Zahir Vally, in the College of Humanities & Social Sciences at UAEU. This work has not previously been presented or published or formed the basis for the award of any academic degree, diploma or a similar title at this or any other university. Any materials borrowed from other sources (whether published or unpublished) and relied upon or included in my thesis have been properly cited and acknowledged in accordance with appropriate academic conventions. I further declare that there is no potential conflict of interest with respect to the research, data collection, authorship, presentation and/or publication of this thesis.

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Abstract

This thesis examined individual differences regarding two prominent emotion regulation processes - cognitive reappraisal and expressive suppression - and their associations with social functioning, psychological well-being and academic performance. Six hypotheses were proposed. It was hypothesized that frequent use of cognitive reappraisal is positively correlated with seeking social support, psychological well-being and academic performance, while the chronic use of expressive suppression is negatively associated with the three factors. Additionally, the differences between high reappraisers and low reappraisers, and between high suppressors and low suppressors, were investigated to confirm the results following the correlational analyses. An online survey was conducted to collect data from 147 university students. Results revealed that habitual use of reappraisal was significantly associated with seeking instrumental social support and enhanced psychological well-being, while the chronic use of suppression was associated with having low social support, impaired well-being and poor academic performance. Moreover, unlike low reappraisers, high reappraisers had better instrumental social support and well-being (i.e. experienced fewer negative feelings, more positive feelings, better affect balance and flourishing). In contrast, high suppressors had less emotional social support, poorer wellbeing and academic performance. These findings enlarge the scope of emotion regulation and dysregulation and can be applied in clinical and non-clinical settings.

Keywords: Emotion Regulation, Cognitive Reappraisal, Suppression, Psychological Wellbeing, Academic Performance, Social Support.
الملخص

هذه الرسالة بحثت الفروق الفردية فيما يتعلق بعمليتين بارزتين لتنظيم المشاعر - إعادة التقييم الإدراكي والكبت التعبيري - وارتباطهما بالوظيفة الاجتماعية، النفسية والأكاديمية. وقد تم اقتراح ستة فرضيات. وقد تضمنت أن الاستخدام المتكرر لاستراتيجية إعادة التقييم الإدراكي (cognitive reappraisal) يرتبط إيجابياً بالدعم الاجتماعي، الصحة النفسية والأداء الأكاديمي. في حين أن الاستخدام المزمن لاستراتيجية الكبت التعبيري (expressive suppression) يرتبط سلبياً بالعوامل الثلاث. إضافة إلى ذلك، النظر إلى العلاقة بين الأفراد الأكثر استخداماً لاستراتيجية إعادة التقييم الإدراكي والأفراد الأقل استخداماً للكبت التعبيري. تم جمع البيانات من 147 طالب في جامعة الإمارات العربية المتحدة عن طريق إجراء استطلاع عبر الإنترنت. أظهرت النتائج أن الاستخدام المعتاد لاستراتيجية إعادة التقييم الإدراكي يرتبط بشكل فعال بطلب الدعم الاجتماعي وتعزيز الصحة النفسية. في حين ارتبط الاستخدام المزمن للكبت التعبيري بانخفاض معدل الدعم الاجتماعي، ضعف الصحة النفسية والأداء الأكاديمي. علاوة على ذلك، فإن الأشخاص الأكثر استخداماً لإعادة التقييم الإدراكي كان طلباً للدعم الاجتماعي أفضل وكذلك صحتهم النفسية (مشاعر إيجابية أكثر، مشاعر سلبية أقل، توازن عاطفي ورفاهية أفضل) من الأشخاص الأقل استناداً لاستراتيجية. في المقابل، فإن الأفراد الأكثر استخداماً للكبت التعبيري كانوا أقل طلباً للدعم العاطفي من المجتمع المحيط بهم لديهم صحة نفسية ومستوى أكاديمي أسوء من الأشخاص الأقل استخداماً للكبت التعبيري. هذه النتائج تفيد فهماً لكيفية تنظيم المشاعر الجوانب الإيجابية والسلبية المرتبطة بها. ويمكن تطبيقها الحالات الإكلينيكية وغير الإكلينيكية لتطوير مهارات تنظيم المشاعر فيما يساعد على التأقلم الأمثل مع الصعوبات المحيطة في جميع جوانب الحياة.

مفهوم البحث الرئيسي: تنظيم المشاعر، إعادة التقييم الإدراكي، الكبت التعبيري.
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Dedication

To my beloved parents and family
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Chapter 1: Introduction

1.1 Overview

Humans are always faced with challenges and hardships during their life span. In order to cope effectively and adapt to such difficulties, regulating one’s emotions is vital to have positive outcomes (Gross, 2001; Gross & John, 2003). In case people are not able to regulate their emotions, they may suffer severely to the extent of having their mood and thoughts disturbed by minor stressors (Gross & Thompson, 2007). This may result in many negative behaviors such as screaming at any stressful event, blaming oneself and being aggressive towards others (Rottenberg & Gross, 2006). Eventually, the inability to regulate one’s emotions may result in many impairments in social relations, occupation, personal domain and other parts of life (John & Gross, 2004; Sheldon, Ryan, Rawsthorne, & Ilardi, 1997). Therefore, people who wish to regain control over their life and adapt effectively to their experienced stressors may greatly benefit from increasing their capacity to regulate their emotions efficiently.

1.2 Emotions

An important formative step in providing a rationale for this study is operationalizing the construct of an emotion. A number of definitions have been proposed. Some consider emotions to be adaptive responses to situations perceived as problems or opportunities (Ekman & Davidson, 1994). Other researchers emphasize the importance of emotions in facilitating how people make decisions and negotiate during social interactions (Gross & Thompson, 2007). It has also been emphasized that emotions can be vital in enhancing individuals’ memory of subjectively valuable and significant events. Furthermore, according to Werner and Gross (2010), emotions can
be very useful and helpful in certain situations, such as the experience of fear when individuals see a dangerous wild animal or the sadness and pain when they lose someone or something of value. According to the authors, emotions appear to assist us to adapt to difficult situations in healthy and functional ways so as to decrease the likelihood of negative affect and promote positive emotions. Despite these adaptive benefits, emotions can be problematic as well, if inappropriate emotions are displayed in inappropriate contexts. Emotions can also hurt if they are experienced with high intensity or for a long period of time (Gross & John, 2003; Werner & Gross, 2010).

People can experience a wide range of emotions across their lifespan. These might include sadness, happiness, embarrassment, guilt, annoyance, enjoyment anger, fear and relief. They may vary according to their intensity, length, the precipitating environment (public or private place), where the emotion is experienced and whether it is primary or secondary (Werner & Gross, 2010). The first emotional reaction is referred to as primary, while the emotional reaction to the first reaction is referred to as the secondary emotion. For example, if a university student obtained an unacceptable grade on an exam, he/she may feel angry (primary emotion) and suppress this feeling from his/her parents or teachers, however, with time a feeling of guilt may emerge as a secondary reaction to the persistent feeling of anger.

As an attempt to integrate these varying components of the construct, scholars have outlined a prototypical definition that highlights the typical features of a wide range of emotional responses. This definition includes four main components; namely, triggers, attention, reappraisal, and response (Werner & Gross, 2010). For example, a situation or an event should trigger (or prompt) one to devote attention towards it. Then it is important to reason and think about it alongside relative goals and norms. This
will determine the stimulated behavioral response and emotional reaction to that situation. These four components might be helpful in understanding how emotions are generated. But as there are many emotions, the focus of this study are the negative thoughts as they are linked to many psychopathologies and regulating them might be very challenging and difficult (Werner & Gross, 2010).

1.3 Emotion Regulation

Emotion regulation is a process through which individuals attempt to modify the way they feel in the pursuit of healthier and adaptive outcomes (Gross & John, 2003; Werner & Gross, 2010). Gross (1998; 2001) explained in his emotion-generative process that people can experience any emotion by passing through three main stages. In the first stage, the person would encounter an internal or external event (thinking about a trauma or experiencing a trauma externally). Such events trigger cognitive responses that may result in physiological (e.g., sweating) and psychological responses (e.g., fear). These responses are indicative of the second stage of the proposed process model. Lastly, in the third stage, the person may generate behaviors which relate to the experienced emotions, such as avoiding or confronting the stressor. Through these three stages people experience emotions and react to it, either positively or negatively. In other words, people are influenced by events in their lives. Events are experienced, recognized, and then responded to, either actively or passively.

Moreover, Gross (1998; 2001) described five main categories of emotional regulation strategies that occur during the three stages of the emotion-generative process (Gross, 2007). These categories are situation selection, situation modification, attentional deployment, cognitive reappraisal and response modulation. During the situation selection strategy, people may decide to avoid any stressful situation from
the beginning to avoid any emotions that are typically associated with it (Beck & Clark, 2009). Therefore, the person may choose to direct his or her attention to a specific event or divert towards another. This may help the person to engage in events that trigger positive and pleasant events and disengage in stressful and anxiety provoking situations. In situation modification people can modify some external aspects of an emotion-eliciting situation to decrease its negativity and increase its positive outcomes. For instance, they may reduce the amount of time engaged in a stressful event (Sheppes & Gross, 2012).

This modification may be useful in situations where people are required to attend to or direct their attention towards the event. In such situations, changing some external aspects of the event may reduce its intensity and negativity. In the attentional deployment stage, people try to distract or disengage themselves from the negative part of the experience that may include fear, anxiety or any other negative affect (Sheppes & Gross, 2011; 2012). The attention of the person is directed from specific parts of the situation that triggers uncomfortable and irritable feelings.

In the cognitive change category, individuals tend to change the meaning of a specific stressful situation through cognitive reappraisal (Richards & Gross, 1999). Through this strategy the focus and the attention will be directed to the content of the event or situation and reinterpret the event so as to lessen the intensity of negative feelings which would, in turn, modify the behavioral response to that situation. In response modulation, people attempt to modify the physiological and behavioral features of an activated response tendency through many strategies which include using expressive suppression (Richards & Gross, 1999).
In this study, the focus will be on using cognitive reappraisal and expressive suppression as they are, arguably, the most frequently used strategies to regulate both negative and positive emotions in everyday life (Gross & John, 2003). The importance of these two strategies has lead a number of researchers to investigate these strategies, evidence that now spans a number of decades (Gross, 2007; Gross & John, 2003; Gross, Richards, & John, 2006; John & Gross, 2004). The explicit focus of these two strategies will provide an unambiguous picture of how each one of these strategies influences various aspects of life. The results of this study may inform an understanding of the best strategy, or strategies, for the promotion of long-term emotional stability and the achievement of a healthy life filled with positivity and acceptance, not passivity and hopelessness. In the following sections, both of these strategies are discussed within the context of their associated mental health outcomes.

1.4 Cognitive Reappraisal and Positive Mental Health Outcomes

Cognitive reappraisal is a process in which individuals reframe their thinking process and rethink of a specific emotion-triggered situation to modify its impact (Gross & John, 2003). People may modify their thinking by altering their interpretations of the experienced events and, during the process, minimize emotional negativity and increase emotional positivity (Frijda, 1986; Lazarus, 1991). Cognitive reappraisal is an antecedent-focused strategy used to modify the emotion formulation process before any emotion-related response is generated (John & Gross, 2004). It helps people to change the impact of negative emotions on their behaviors and thus control the outcome of any experience (Lazarus & Alfert, 1964).

For example, students who interpret delivering a presentation as an anxiety-eliciting situation may be more anxious than those who alter their interpretation from
thinking that “people will laugh at me because I am not going to do it properly” to thinking that “I think I can manage it if I prepare well”. This reappraisal strategy may help the student to be less anxious and more relaxed and focused. Evidence supports the contention that cognitive reappraisers appear to be more adept at adapting to negative life events (Gross, 2007). For example, researchers have found that the frequent use of cognitive reappraisal is associated with experiencing more positive emotions; less negative emotions; lowered levels of anger; and an increased capacity to adapt to emotionally challenging experiences (Mauss, Cook, Cheng, & Gross, 2007).

1.4.1 Cognitive Reappraisal and Social Functioning

Social interaction may trigger many intense emotions, both negative and positive (John & Gross, 2004). Using cognitive reappraisal may help social interactions unfold more smoothly. Researchers have found that people who more frequently use reappraisal, share their positive and negative emotions with others, leading to healthier outcomes compared to those who use it less frequently (John & Gross, 2004). Habitual reappraisers were found to make their conversational partner less distressed and anxious (Butler et al., 2003). Moreover, they are likely to have more close friends than those who use reappraisal less frequently (Gross & John, 2003). This may be explained by their attitude to express their emotions and respond to the emotions of others effectively.

In regard to social support, habitual reappraisers are more likely to form positive social attachments, conduct healthy social conversations and seek social support if needed than people who use reappraisal less frequently (Butler et al., 2003; Gross & John, 2003). This may help decrease their physical agitation and irritability.
when experiencing a stressor (Uchino, Cacioppo & Kiecolt-Glaser, 1996). Therefore, using cognitive reappraisal may work as an effective coping mechanism at the time of difficulty. Another social advantage that habitual reappraisers have is that they are more likeable among their friends as they tend to maintain their social relations (Gross & John, 2003). This may explain why they experience more positive emotions and less symptoms of depression and anxiety (Gross & John, 2003; Nolen-Hoeksema, Morrow & Fredrickson, 1993).

1.4.2 Cognitive Reappraisal and Well-being

Gross and John’s (2003) findings suggest that the frequent use of coping reappraisal is linked to many positive outcomes. For example, they found that individuals who habitually use reappraisal showed fewer symptoms of depression. These individuals were more satisfied with their lives, more optimistic, and had better self-esteem. They also had higher levels of environmental mastery, personal growth, self-acceptance, and a clearer purpose in life. This, in general, shows that psychological well-being is greatly influenced by people’s thinking of daily situations and events. As people rethink and reappraise their stressful experiences, the more enhanced their well-being would be. Therefore, they become more competent in dealing with a wider range of problems and obstacles, which furthers their growth and increases the quality of their lives.

1.4.3 Cognitive Reappraisal and Cognitive Ability

High use of cognitive reappraisal is associated with positive cognitive outcomes such as reducing amygdala functioning and increased prefrontal activities when responding to negative stimuli (Drabant, M Crae, Manuck, Hariri & Gross, 2009).
This may help increase the ability to adapt effectively with stressful situations. Moreover, using cognitive reappraisal may have a positive impact on memory which is an important cognitive component (Craik & Lockhart, 1972). For instance, some experimental studies found that high reappraisers displayed higher performance on behavioral memory tasks than individuals with low reappraisal (Richards & Gross, 2000; Sheppes & Meiran, 2008). In addition, other correlational studies have found positive relations between the high usage of cognitive reappraisal and improved memory abilities (Gross & John, 2003; John & Gross, 2004).

1.5 Expressive Suppression and Negative Outcomes

Suppression occurs at the last stage of the emotion generative process and it aims to inhibit the expression of the behaviors triggered by a stressful situation (Gross, 2007). However, the experience of induced negative emotions remains without change (Gross & Levenson, 1993). For example, students may suppress their anger at performing below average on an exam. They may not tell their parents or friends as a way to inhibit emotion-related behaviors. Nevertheless, the feeling of anger is may persist which may then result in experiencing other negative outcomes in the future. People may also suppress positive emotions, such as not showing happiness at a funeral. But most researchers focus on suppressing negative emotions because they may lead to serious negative outcomes, unlike suppressing positive emotions (Gross & John, 2003; John & Gross, 2004).

1.5.1 Expressive Suppression and Social Functioning

People who use suppression to regulate their emotions may not be able to cope effectively with their social environment. This is demonstrated by an experimental
study in which multiple pairs of women were assigned to sit together, one of the members in each pair who was assigned as a regulator was asked to suppress their emotions while talking to the other member, while on the other condition the regulator was free to express any emotions (Butler et al., 2003). The findings showed that suppression lead to significant disruption in the communication between the conversational partners. It also increased the level of blood pressure of both members (i.e. the regulators and their partners). Suppression may eventually hinder social communication and reduce the ability to form rapport with other people.

Frequent suppressors may feel fewer positive emotions (Abler et al., 2010; Larsen et al., 2012) and may experience incongruence between their inner and outer worlds (Higgins, 1987). This may be due to the negative reactions that come from other people in response to their avoidance of social interactions and not wanting to share their inner feelings with them or seek social support (Gross & John, 2003; John & Gross, 2004; Rimé, Philippot, Boca & Mesquita, 1992). This, in turn, may lead suppressors to experience many physical and psychological (distorted sense of self and depression) and social (interpersonal problems) outcomes (Sheldon et al., 1997).

1.5.2 Expressive Suppression and Well-being

Unlike cognitive reappraisers, those who use suppression frequently to regulate their emotions experience more negative emotions such as depression and anxiety (Gross & John, 2003; Nolen-Hoeksema, Morrow & Fredrickson, 1993). They also feel less satisfied with their lives and less optimistic about the future (Gross & John, 2003). This lowers their self-esteem, reduces their motivation to initiate new social relationships or engage in activities and, consequently, negative affect may become prominent in their lives (Gross & John, 2003; John & Gross, 2004). Despite the
potential for these negative outcomes, they may be reluctant to use any strategies other than suppression as they be accustomed to its use. This vicious cycle may lead them to have many social, occupational and other forms of impairment in their lives.

1.5.3 Expressive Suppression and Cognitive Ability

Unlike using cognitive reappraisal, using suppression as an emotional regulation strategy hinders cognitive functioning. In Richards and Gross (2000), suppressors who watched a movie, were less able to remember certain scenes from the movie when asked to do so. This finding clearly demonstrates how suppression may influence memory negatively as well as making it more difficult for suppressors to retrieve social-related memories or accurately remember details. As a result, suppressors may find people unwilling to join them in activities because they have difficulty sharing or recalling the joy of the experience with others.

Moreover, another study shows how hard it is for habitual suppressors to recall what they should say during stressful speeches (Egloff, Schmukle, Burns, & Schwerdtfeger, 2006) Despite being able to suppress the expression of anxiety, poor memory increased psychological arousal for participants in this study. This emphasizes the difficulty that suppressors experience when remembering a social interaction or recalling a name of a person or other important details accurately (Moore & Zoellner, 2012). If students were to use suppression, their memory may be negatively affected to the extent that they may not be able to learn effectively, answer questions in class or during an exam, deliver a presentation or even complete an assignment. In sum, the academic performance of students may be dramatically hindered by the habitual use of suppression as an emotional regulation mechanism.
1.6 The Present Study

The aim of this study is to examine how people in general and students in particular regulate their emotions to cope with the demands of their environments, which may increase their level of anxiety, precipitate depressive symptoms and promote fear or a sense of inadequacy in relation to social interactions and academic performance. Therefore, this study will examine how individuals regulate their negative emotions and whether they do so in a healthy and adaptive manner or in a dysfunctional and harmful manner. In this regard, two emotion regulation processes (cognitive reappraisal and expressive suppression) were investigated in association with their positive or negative outcomes in social, psychological and academic aspects of life. Unlike previous studies that have exclusively focused on first-world, Western samples and populations from East Asia (Butler, Lee, & Gross, 2007), this study examines emotional regulation strategies in a population from the Middle East, a context in which the subject is yet to be investigated.

1.7 Hypotheses

All hypotheses are focused on the main outcomes of the study (i.e. seeking social support, overall psychological wellbeing and academic performance). Seeking social support was chosen in accordance with the study of Gross and John (2003) as they found a significant association between the habitual use of suppression and seeking less social support, but not between reappraisal and social support. The authors used a social support survey (both emotional and instrumental) to measure social relationships (i.e. interpersonal functioning). Regarding cultural differences, the population in this study are assumed to conform to social norms that may described as collectivistic, not individualistic, a culture that is characterized by a relatively high
level of social interactions, conformity, and solidarity with the larger group/community.

Moreover, the study of Gross and John (2003) focused on overall well-being and how it is influenced by the use of reappraisal and suppression. The authors examined factors such as depression, anxiety, and life satisfaction/well-being. Similarly, various measures were used in this study to examine overall wellbeing of participants. Furthermore, the study focused on cognitive ability in relation to the two emotion regulation strategies. In the same line, the academic performance (i.e. CGPA) of students was used as an outcome variable as it encompasses many cognitive functions such as problem-solving ability, data analysis memorization, memory retrieval and comprehension.

The following hypotheses were proposed:

H1a: Habitual use of cognitive reappraisal will be positively correlated with seeking social support.

H1b: Habitual use of expressive suppression will be inversely correlated with the tendency to seek social support.

H2a: Habitual use of cognitive reappraisal will be positively correlated with overall wellbeing.

H2b: Habitual use of expressive suppression will be negatively correlated with overall wellbeing.

H3a: Habitual use of cognitive reappraisal will be positively correlated with academic performance.
H3b: Habitual use of expressive suppression will be negatively correlated with academic performance.
Chapter 2: Methods

2.1 Research Design

A cross sectional, survey-based design was employed in this study.

2.2 Procedure

All data were collected through Google Forms (i.e. an online survey platform). Participants from various departments were approached through emails taken by simple random sampling from a sampling form provided by the UAEU. Prior to presentation of the questionnaire, a consent form was shown to be read and approved by participants on the first page. Participants were informed about the main components under investigation, but not the studied hypotheses. Anonymity, confidentiality of the data, and the ability to withdraw were ensured for all participants.

Participants were then asked to complete the questionnaire which was divided into several sections. The survey measured emotion regulation, instrumental social support, emotional social support and the CGPA of student. Participants took about ten minutes to complete the questionnaire. Moreover, ethical approval for the conduct of this study was received from UAEU’s Social Sciences Research Ethics Committee.

2.3 Participants

The sample consisted of a total of 147 participants who were currently registered graduate (12%) and undergraduate (88%) students at the United Arab Emirates University. The majority of participants were Emirati citizens (64%), while other nationalities were mostly from the Middle East (28%), such as Bahrain, Saudi Arabia, Jordan Syria, Lebanon and Yemen. Participants were enrolled in various
programs such as Psychology (28.6%), Clinical Psychology (9.8%), Engineering (8.4%), Science (15%), Medicine (7.5%), Political Studies (7.5%) and Information Technology (7%). In addition, participants were diverse in terms of the year of study, with 36.7% in their first year, 30% in their second year, 20.4% in their third year and 12.2% in their fourth year. The vast majority of participants were females, being 89%. Moreover, participants’ age ranged from 17 to 42 years old, while the majority were 18 (19.7%), 19 (16.3%), 20 (15.6%) and 21 (11%) years old.

2.4 Materials

Descriptions of all assessment measures used in this study are included below:

Reappraisal and Suppression. The Emotion Regulation Questionnaire (ERQ) was used to measure the habitual use of cognitive reappraisal and expressive suppression (Gross & John, 2003). This scale contains a total of ten items from which six items measure cognitive reappraisal (e.g. “When I want to feel more positive emotion such as joy or amusement, I change what I’m thinking about”). The rest of items measure expressive suppression (e.g. “I keep my emotions to myself”). A 7-point Likert scale is used to respond to each item (from 1=“Strongly disagree” to 7 = “Strongly agree”). In addition, the ERQ has been shown to have good internal reliability as well as adequate discriminant and convergent validity (John & Gross, 2010; Batistoni, Ordonez, Silva, Nascimento, & Cachioni, 2013; Gross & John, 2003; Sala et al., 2012). In the present study, cronbach’s alpha for the 6 items of reappraisal was 0.80 and 0.73 for the items of supression.
Social Functioning. To measure social support, two scales taken from the Cope Inventory were used to examine the extent to which individuals use social support to cope with their stress (Carver, Scheier, & Weintraub, 1989). The emotional social support subscale is one of the two which measures whether participants have supportive people to seek assistance from when they have emotional issues or want to be relieved (e.g. “I discuss my feelings with someone”). The instrumental social support subscale is the second one which measures to what extent participants have people to ask for help when they encounter a certain problem (e.g. “I ask people who have had similar experiences what they did”). Each subscale contains 4 items and 4 choices of response; (ranging from 1 = “I usually don't do this at all” to 4 = “I usually do this a lot”). The COPE inventory has proved to have high reliability as well as good convergent and discriminant validity (Carver, Scheier, & Weintraub, 1989). Cronbach’s alpha was 0.74 for the emotional support subscale and 0.80 for the instrumental social support subscale.

Well-being. The Psychological Well-being Scale was used to measure well-being (Diener et al., 2009). It contains four measures, two of which are related to positive experiences and two relate to negative experiences (6 items for positive feelings and 6 items for negative feelings) in which participants indicate how much they have experienced the particular emotion during the preceding 4 weeks using 5-point Likert scale (1=Very rarely or never to 5= Very often or always). The third measure is related to affect balance and can be generated from the 12 items and it represents factors like life satisfaction, general wellbeing and overall happiness (Diener et al., 2009). The fourth measure is related to flourishing which measures success in important domains such as self-esteem, purpose and optimism. The scale includes 8 statements to which participants may agree or disagree using a 7-point
Likert scale (1 = “Strongly disagree” to 7 = “Strongly agree”). High scores indicate that the person has many psychological resources and strength. This scale has very good convergent validity (Diener et al., 2009). Cronbach’s alpha was 0.85 for the scale of positive feelings, 0.73 for the scale of the negative feelings and 0.84 for the flourishing scale.

Academic Performance. Cumulative Grade Point Average (CGPA) taken from students at their current educational level as a measure of cognitive ability and academic performance. The responses in this measure ranges between 0 and 4.00.

Demographic Questions. Information was taken from participants in regard to nationality, gender, age, program of study (e.g. psychology or engineering) and year of study.

2.5 Data Analysis Plan

Missing data were replaced with the mean of each variable. After conducting normality tests for all measures, variables which were considered to have normal distributions where analyzed through parametric tests, while variables that did not meet the criteria for a normal distribution were analyzed through non-parametric tests (Field, 2018). Continuous variables were reported using means and standard deviations while categorical variables were described through the use of percentages or counts. Pearson correlation coefficients and Spearman's rank-order correlations were used to examine the relationship between independent and dependent variables, while independent samples t-tests and Mann-Whitney U-tests were used to examine the differences between the various groups in terms of the dependent variables.
Chapter 3: Results

Descriptive statistics including the mean, standard deviation and group size were calculated for all the variables in the study (see Table 1). After applying the Kolmogorov-Smirnov test of normality, a Pearson correlation coefficients and an independent samples t-test were used as a parametric test for normally distributed data while Spearman's rank-order correlations and Mann-Whitney U-tests were used as non-parametric tests for data that were not normally distributed (Field, 2018). Regarding relationships between variables, Pearson correlation coefficients were used for emotional social support and affect balance as they were normally distributed while Spearman's rank-order correlations were used for other measures that were not normally distributed (see Table 2).

Table 1: Descriptive statistics for all measures used in this study

<table>
<thead>
<tr>
<th>Measure</th>
<th>M</th>
<th>SD</th>
<th>n</th>
<th>Kolmogorov-Smirnov Statistic</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive reappraisal scale</td>
<td>30.50</td>
<td>7.22</td>
<td>147</td>
<td>.069</td>
<td>.082</td>
</tr>
<tr>
<td>Expressive suppression scale</td>
<td>16.65</td>
<td>5.55</td>
<td>147</td>
<td>.072</td>
<td>.063</td>
</tr>
<tr>
<td>Emotional social support</td>
<td>9.76</td>
<td>3.15</td>
<td>147</td>
<td>.073</td>
<td>.054</td>
</tr>
<tr>
<td>Instrumental social support</td>
<td>11.35</td>
<td>2.83</td>
<td>147</td>
<td>.107</td>
<td>.000</td>
</tr>
<tr>
<td>Positive experience</td>
<td>21.35</td>
<td>4.49</td>
<td>147</td>
<td>.088</td>
<td>.008</td>
</tr>
<tr>
<td>Negative experience</td>
<td>16.24</td>
<td>4.52</td>
<td>147</td>
<td>.100</td>
<td>.001</td>
</tr>
<tr>
<td>Affect balance</td>
<td>5.09</td>
<td>8.02</td>
<td>147</td>
<td>.061</td>
<td>.200</td>
</tr>
<tr>
<td>Flourishing Scale</td>
<td>41.50</td>
<td>8.15</td>
<td>147</td>
<td>.110</td>
<td>.000</td>
</tr>
<tr>
<td>Academic performance</td>
<td>3.15</td>
<td>.64</td>
<td>147</td>
<td>.118</td>
<td>.000</td>
</tr>
</tbody>
</table>

M = mean   SD = Standard deviation
Additionally, to confirm the differences found following the correlational analyses, t-tests and Mann-Whitney U-tests were used to compare high reappraisers to low reappraisers and high suppressors to low suppressors. Independent Samples t-tests were used to compare high reappraisers to low reappraisers in terms of emotional social support, positive feelings and affect balance while Mann-Whitney U-tests were conducted for the rest of the measures that were not normally distributed (see Table 3). Moreover, Independent Samples t-tests were used to compare low suppressors with high suppressors with regard to emotional social support and affect balance while Mann-Whitney U-tests were used for the remaining measures that were not normally distributed (see Table 4).

Table 2: Correlation coefficients between habitual use of reappraisal and suppression and seeking social support, well-being and academic performance.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Reappraisal</th>
<th>Suppression</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seeking social support</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional social support</td>
<td>.119</td>
<td>-.391**</td>
</tr>
<tr>
<td>Instrumental social support</td>
<td>.204*</td>
<td>-.206*</td>
</tr>
<tr>
<td>Well-being</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive feelings</td>
<td>.353**</td>
<td>-.177</td>
</tr>
<tr>
<td>Negative feelings</td>
<td>-.224**</td>
<td>.198*</td>
</tr>
<tr>
<td>Affect balance</td>
<td>.296**</td>
<td>-.185*</td>
</tr>
<tr>
<td>Flourishing Scale</td>
<td>.486**</td>
<td>-.114</td>
</tr>
<tr>
<td>Academic performance</td>
<td>.030</td>
<td>-.179*</td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.01 level
* Correlation is significant at the 0.05 level
Table 3: Descriptive statistics and results of t-test / Mann-Whitney U-test for low reappraisers and high reappraisers.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Low reappraisers (n=73)</th>
<th>High reappraisers (n=74)</th>
<th>p value for difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>Emotional social support</td>
<td>9.57</td>
<td>2.98</td>
<td>9.95</td>
</tr>
<tr>
<td>Positive feelings</td>
<td>20.47</td>
<td>3.85</td>
<td>23.13</td>
</tr>
<tr>
<td>Affect balance</td>
<td>3.70</td>
<td>6.77</td>
<td>7.85</td>
</tr>
<tr>
<td></td>
<td>Mean</td>
<td>Rank</td>
<td>Mean</td>
</tr>
<tr>
<td>Instrumental social support</td>
<td>66.98</td>
<td>4889.50</td>
<td>80.93</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative feelings</td>
<td>81.95</td>
<td>5982.50</td>
<td>66.16</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flourishing Scale</td>
<td>56.12</td>
<td>4097</td>
<td>91.64</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academic performance</td>
<td>72.92</td>
<td>5323.50</td>
<td>75.06</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.01 level
* Correlation is significant at the 0.05 level
3.1 Social Functioning

Regarding emotional and instrumental social support, which were operationalized as the measurement of social support, the results show a significantly positive correlation between the frequent use of cognitive reappraisal and instrumental social support, $r = 0.204, n = 147, p < 0.01$. Nevertheless, the relationship between the use of cognitive reappraisal and seeking emotional social support was not significant,
Considering the result of instrumental support, hypothesis 1a was supported. In addition, there was a significantly negative correlation between frequent use of expressive suppression and seeking emotional social support $r = -0.391, n = 147, p < 0.01$, and instrumental social support $r = -0.206, n = 147, p < 0.05$. Therefore, hypothesis 1b was supported.

Furthermore, high reappraisers who represent individuals who used cognitive reappraisal more frequently (Mdn = 12) reported seeking instrumental social support significantly more than low reappraisers who represent individuals who used cognitive reappraisal less often (Mdn = 11.5), $U = 2188.5, z = -1.99, p < 0.05$ (see Table 3). However, no difference was found between the high reappraisal (M= 9.95, SD= 3.32) and low reappraisal (M= 9.95, SD= 3.32) groups in terms of emotional social support, $t(145) = 0.737, p > 0.05$ (see Table 3). Related to suppression, high suppressors (i.e. individuals who use expressive suppression more often) (M= 8.84, SD= 3.06) were significantly less likely to seek emotional social support than low suppressors (i.e. individuals who use expressive suppression less often) (M= 10.71, SD= 2.98); $t(145) = 3.75, p < 0.01$ (see Table 4). But no difference was found between high suppressors (Mdn = 11.3) and low suppressors (Mdn = 12) in terms of seeking instrumental social support, $U = 2271.5, z = -1.67, p > 0.05$.

### 3.2 Psychological Wellbeing

Regarding well-being (which consist of four measures; positive feelings, negative feelings, affect balance, and flourishing scale), the habitual use of appraisal was statistically correlated with the experience of more positive feelings, $r = 0.353, n = 147, p < 0.01$, less negative feelings, $r = -.224, n = 147, p < 0.01$, high scores in the
affect balance scale, $r = 0.296$, $n = 147$, $p < 0.01$, and in the flourishing scale, $r = 0.486$, $n = 147$, $p < 0.01$ (see Table 2).

Regarding expressive suppression, the habitual use of suppression showed a significant correlation with experiencing more negative feelings, $r = 0.198$, $n = 147$, $p = 0.016$, and having lower scores in the affect balance scale, $r = -0.162$, $n = 147$, $p = 0.025$ (see Table 2). Nonetheless, suppression was not significantly associated with the experience of positive feelings, $r = -0.177$, $n = 147$, $p > 0.05$, nor with the scores in the flourishing scale, $r = -0.114$, $n = 147$, $p > 0.05$ (see Table 2). Therefore, hypothesis 2a and 2b were supported.

Moreover, t-test results showed that high reappraisers ($M=23.13$, $SD=3.37$) reported experiencing significantly more positive feelings than low reappraisers ($M=20.47$, $SD=3.85$); $t (145) = -4.467$, $p < 0.01$, and scored higher in the affect balance scale; $t (145) = -3.715$, $p < 0.01$ (see Table 3). Mann-Whitney test results showed that high reappraisers ($Mdn = 15$) experienced significantly lower negative feelings than low reappraisers ($Mdn = 16$), $U = 2122.5$, $z = -2.27$, $p < 0.05$. In addition, high reappraisers ($Mdn = 46$) scored higher in the flourishing scale than low reappraisers ($Mdn = 38$); $U = 1393$, $z = -5.06$, $p < 0.001$ (see Table 3).

Furthermore, in comparison to high suppressors ($M=4.67$, $SD=6.65$), low suppressors ($M=7.0$, $SD=7.25$) reported significantly higher scores in the affect balance scale; $t (145) = 2.03$, $p < 0.01$ (see Table 4). In addition, high suppressors ($Mdn = 16$) reported experiencing significantly more negative feelings than low suppressors ($Mdn = 15$), $U = 2134.5$, $z = -2.20$, $p < 0.00$. Nonetheless, no significant differences were found between high suppressors ($Mdn = 21.86$) and low suppressors ($Mdn = 22.0$) in terms of positive feelings, $U = 2352.5$, $z = -1.35$, $p > 0.05$. (see Table
Additionally, scores for the flourishing scale was not significantly different between high suppressors (Mdn = 41.84) and low suppressors (Mdn = 44); U = 2473, z = -0.88, p > 0.05.

3.3 Academic Functioning

Regarding academic performance, the results showed a significant correlation between the frequent use of expressive suppression and impaired academic performance, \( r = -0.179, n = 147, p = 0.030 \), while no significant association was found between cognitive reappraisal and academic performance, \( r = 0.030, n = 147, p > 0.05 \). (see Table 2). Therefore, hypothesis 3b was supported while hypothesis 3a was not. Moreover, low suppressors (Mdn = 3.35) had significantly better academic performance compared to high suppressors (Mdn = 3.15); U = 2093.50, z = -2.36, p < 0.05 (see Table 4).
Chapter 4: Discussion

The aim of this study was to examine cognitive reappraisal and suppression as strategies to regulate emotions and their associations with three outcomes, seeking social support, overall psychological well-being and academic performance. Reappraisal is a strategy used to reinterpret a specific emotional event or situation to reduce its negative intensity and adapt positively (Gross & John, 2003; John & Gross, 2004). This strategy helps individuals to find alternative ways of thinking about significant stressors in their lives in order to achieve more positive outcomes in relation to their social lives, life satisfaction, self-esteem, education, occupation and others. On the other hand, suppression is a strategy used to regulate one’s emotion through suppressing or preventing behaviors elicited by negative emotions while the experience of these negative feelings is ongoing internally (Gross & John, 2003; Werner & Gross, 2010). The inability to release such negative affect can have many negative consequences in the lives of those who habitually engage in suppression.

To this end, six hypotheses were proposed and sought to examine the habitual use of each of the two emotion regulation strategies in relation to the three outcomes (i.e. seeking social support, overall psychological well-being and academic performance). Furthermore, the relationship between high reappraisal and low reappraisal as well as high suppressors and low suppressors were examined to confirm the differences found through the correlational analyses. As hypothesized, habitual use of reappraisal was associated with seeking more social support (instrumental not emotional), and high reappraisers reported seeking instrumental social support more than low reappraisers. Meanwhile, the habitual use of suppression was associated with seeking less instrumental and social support, and high suppressors were less likely to
seek emotional support than low suppressors. This is in line with the findings of Gross and John (2003) and suggests that individuals who frequently reappraise their negative situations are likely to have people in their lives to ask for assistance when they face practical problems. In contrast, the findings suggest that people who regulate their emotions through suppression are likely to have few or no people to ask for support when they encounter practical or emotional issues. Additionally, individuals who use reappraisal, also more frequently and readily elicit social support from others, which may help them to solve their problems more efficiently and adapt to their stressors successfully. However, people who use suppression seek less emotional support, which may lead them to be lonely, socially isolated and depressed (Gross & John, 2003; Werner & Gross, 2010).

Being socially isolated may distort the cognitions of habitual suppressors regarding and how people think, feel and behave in relation to them (Beck & Clark, 2009; John & Gross, 2004). This may hinder their ability to function successfully in their social lives. In addition, accumulated negative experiences to form or maintain relationships with others may facilitate further social isolation, passivity, emotional instability, sense of social incompetence, social anxiety and fear of social interactions (Berking, Wupperman, Reichardt, Pejic, Dippel & Znoj, 2008; Sheppes, Suri & Gross, 2015). These symptoms are directly related to psychological disorders such as social anxiety disorder, avoidant personality disorder, antisocial personality disorder and borderline personality disorder (Butler et al., 2003; Davey, 2015; Nolen-Hoeksema, Morrow & Fredrickson, 1993).

As predicted, regular use of reappraisal was associated with experiencing more positive feelings, less negative feelings, a high level of affect balance and a greater
sense of flourishing. Additionally, high reappraisers reported better overall psychological well-being (in the four measures) than low reappraisers. In contrast, the habitual use of suppression was associated with the experience of more negative feelings and low affect balance. Additionally, high suppressors experienced more negative feelings and lower affect balance than low suppressors.

These results are in line with the study of Gross and John (2003) and suggest that regular reappraisers are likely to be more positive, happy, joyful and contented, while regular suppressors are likely to be negative, sad, afraid and angry (Diener et al., 2009). This shows that the negativity experienced from a stressful event may be reduced by giving it another meaning rather than experiencing it internally. In addition, the findings imply that the frequent use of reappraisal leads to high levels of affect balance and flourishing, which indicates having many psychological resources and strength such as being optimistic and satisfied with life and having enhanced psychological well-being and overall happiness. The more people use reappraisal, the better well-being they can achieve, while the more individuals use suppression, the worse psychological wellbeing they are likely to achieve. For example, those who have difficulty regulating their negative emotions are prone to develop psychopathology such as general anxiety disorder (Mennin, Fresco, Ritter & Heimberg, 2015).

The findings also demonstrate that the frequent use of suppression was inversely correlated with academic performance, and high suppressors reported poorer academic performance compared to low suppressors. However, no significant relations were found between the use of reappraisal and academic performance, and no significant differences were found between high and low reappraisers. These findings suggest clearly that suppressing negative emotions on a regular basis has
unsatisfactory academic outcomes and that high suppressors will likely be affected the most in their academic performance.

The reluctance or inability to seek social support may be one of the contributing factors that potentially explains these findings (Werner & Gross, 2010). As high suppressors are less likely to have friends, family members or teachers to whom they can turn to for help, their stressful academic issues are less likely to be solved which can severely hinder their performance (Gross & John, 2003). Another contributing factor may be related to the loss of interest in improving their academic level. This loss of interest is one of the depressive symptoms that regular suppressors experience (Davey, 2015). Students who regulate their emotions through suppression may also have low self-esteem which can make them unwilling to take on initiatives or compete productively with their colleagues (Gross & John, 2003).

Furthermore, not finding a significant relation between reappraisal and academic performance may be due to the multiple factors that determine one’s academic level. These multiple factors can include having sufficient time to study, being conscientious and diligent, having a high level of intelligence and experience in one’s field. Therefore, using reappraisal can be related to improved academic performance if such contributing factors are controlled. Nonetheless, the results showed that the more students suppress their negative feelings to regulate them, the poorer performance they will achieve in academia. This is very important because it may be used to inform students, their parents and teachers that the habitual use of suppression is harmful to a great extent to their education. This information may dissuade them from using this strategy and rather encourage them to talk about their
experienced stressors and negative emotions with those whom they trust (Werner & Gross, 2010).

Individuals who have authoritarian parents are likely to use suppression very often because they are rarely allowed to share their thoughts, opinions and feelings freely (Essau, LeBlanc, & Ollendick, 2017). They may be punished for expressing unpleasant attitudes or for seeking proximity with their parents (Werner & Gross, 2010). Students who are raised in this environment can be severely anxious and emotionally unstable as they suppress their negative feelings. This may lead them eventually to use physical and verbal violence to reach their aims such as fighting with their siblings, bullying their peers, disrespecting their teachers and violating the rules (Essau, LeBlanc, & Ollendick, 2017).

Violating social norms is a symptom of conduct disorder which may be precipitated by prolonged social detachment (Essau, LeBlanc, & Ollendick, 2017; Davey, 2015). This can, in part, be explained by the lack of emotional understanding suppressors have about themselves and others and by the inability to make decisions and solve problems. The results of this study demonstrates the inability of these individuals in developing such social and personal skills. Psychological intervention can be used with children who use suppression and their parents to learn strategies such as cognitive reappraisal and coping skills which can improve their social lives and foster their adaptation to difficulties and turbulences (Essau, LeBlanc, & Ollendick, 2017; Werner & Gross, 2010).

Children with authoritative parents have the chance to develop empathy and emotional understanding (Werner & Gross, 2010). Where children observe how their parents or caregivers interact with their social relations effectively, the learning of
healthy social skills becomes easier (Larsen et al., 2012). Additionally, as authoritative parents provide the chance for their children to make decisions and express their opinions and emotions, children would likely develop the cognitive ability to use reappraisal to reframe the meaning of stressful experiences (Werner & Gross, 2010). They would also seek social support and share their experiences with others which can increase their social function and prevent them from social isolation (Gross & John, 2003). Therefore, students can be affected immensely by the style of parenting they experience during childhood.
Chapter 5: Conclusion

5.1 Research Implications

It is evident from the discussion of the findings above that seeking social support, overall psychological wellbeing and academic performance are interrelated. Additionally, cognitive reappraisal was shown to be associated with more positive outcomes regarding the three domains, while suppression was associated with negative outcomes (Gross & John, 2003; Werner & Gross, 2010). These findings hold significance for non-clinical settings such as schools where children who experience difficulty regulating their negative emotions may experience impairment in their social and academic functioning (Werner & Gross, 2010; Rimé, Philippot, Boca & Mesquita, 1992).

The findings provide a method for parents and teachers to help students who frequently use suppression to have an awareness about its associated negative impact. For example, students who perceive themselves to be unlovable by their peers can be taught that sharing their thoughts and emotions with others might improve their social relations (Gross & John, 2003). This may help children change their emotional regulation strategy from that of suppression to the use of cognitive reappraisal.

Moreover, these findings also hold relevance for clinical areas such as in the conceptualization and treatment of psychopathology (Berking et al., 2008; Werner & Gross, 2010). For instance, asking individuals about their emotional regulation strategies can considerably add to the assessment process. If certain individuals experience emotional dysregulation, certain predictions about the associations
between emotional dysregulation and psychological, social and academic functioning can be made in light of the findings of this research.

Moreover, interventions such as Emotion Regulation Therapy, Cognitive Behavioral Therapy (CBT) and Dialectical Behavioral Therapy (DBT) can be applied (Davey, 2015; Sheppes, Suri & Gross, 2015). During the course of these psychotherapies, clients learn emotional regulation skills such as the use of cognitive reappraisal which may help them deal with their ongoing internal negative feelings and increase the authenticity between their inner and outer worlds (Sheldon et al., 1997). They can also adopt useful social skills that facilitate building rapport and sharing thoughts and emotions with others which can eliminate social impairment (Gross, Richards, & John, 2006). Interventions such as CBT can be helpful in reducing or altering dysfunctional thoughts that suppressors may have about themselves and others (Werner & Gross, 2010). Therefore, the findings may inform the clinical process of assessment, diagnosis and treatment planning.

5.2 Research Limitations

There are several limitations of this study that need to be considered. One of them is sample size. Although 147 participants were examined, Gross and John’s (2003) seminal study included four groups with the sample size ranging from 116 to 791 in each group. Moreover, people with different occupations and those of varying ages, not only students, should be included to improve the representativeness of the sample and, consequently, the generalizability of the findings. In addition, language was a limitation to this study. Although all participants receive their primary education in English, the mother tongue of the majority is Arabic. Therefore, measures specifically developed and validated in the Arabic language would be more useful.
Future studies should take these limitations into consideration. Moreover, further studies are needed regarding the use of emotional regulation strategies in the United Arab Emirates and the Middle East more generally.
References


