ASSESSING CONTEXT IN EMOTION REGULATION:

VALIDATING THE DIFFICULTIES IN INTERPERSONAL REGULATION OF EMOTION (DIRE) SCALE

AND ITS USE IN MEASURING EMOTION REGULATION VARIABILITY

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Abstract

As research into emotion regulation (ER) expands, it is important to empirically account for contextually relevant aspects of interpersonal emotion regulation (IER). This study aimed to validate the Difficulties in Interpersonal Emotion Regulation (DIRE) scale, a new measure of interpersonal emotion dysregulation and examine its relationship to measures of psychopathology and well-being across three contexts (i.e., task, romantic, social). We also explored the utility of using the scenario-based structure of the DIRE to develop an ER variability score that would capture the number of strategies a person accesses between- and within-contexts. A test of the DIRE resulted in adequate model fit and validated its factor structure. DIRE scales were associated with emotion dysregulation, depression, and well-being. ER variability scores showed associations with emotion dysregulation and depression. These findings demonstrate the strong validity of the DIRE measure and underscore the importance of including situational contexts in IER research.

Keywords: interpersonal emotion regulation, context, emotion regulation variability

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Assessing Context in Emotion Regulation: Validating the Difficulties in Interpersonal Regulation of Emotions (DIRE) Scale and its use in Measuring Emotion Regulation Variability

Current emotion regulation (ER) measures do not adequately account for the role of situational context in the regulation process (Aldao, 2013) including how ER strategies may vary across social, romantic, and task focused situations. Context is a key part of understanding development (Cicchetti & Rogosch, 2002; Cicchetti & Toth, 2009), including ER development, and refers to the *circumstances that bring about a regulatory response*. As such, context is an important factor to consider because effective ER includes meeting situational demands (e.g., effective ER strategies one uses at work may differ from effective ER strategies one uses in their romantic relationship). It is important to understand the influence of contextual factors on ER so that informed decisions can be made about which regulation strategies are effective and which are ineffective in certain contexts.

Effective ER is associated with psychological and social well-being whereas emotion dysregulation is associated with the development of psychological disorders, such as anxiety and depression (Aldao & Nolen-Hoeksema, 2010; Aldao & Nolen-Hoeksema, 2012). In general, regulation strategies are categorized as adaptive or maladaptive based on their ability to meet assumed regulatory goals and on their relationship to psychological disorders (e.g., anxiety or depression). These categorizations, however, have been made using psychometric measures that do not account for the influence that context has on ER strategy use (Aldao et al., 2012). Moreover, this categorization may not reflect the effectiveness of a given ER strategy across contexts (Aldao, 2013).

More recently, research on ER has expanded to include various types of ER, including interpersonal emotion regulation (IER). IER is the process by which people use others to regulate their emotions (Zaki & Williams, 2013). Thus far, research into this area has focused more on theoretical conceptualizations than on empirical foundations (Aldao, 2013; Aldao et al., 2012). Furthermore, existing theoretical frameworks have not addressed difficulties with IER and how this relates to the development of psychopathology (Dixon-Gordon et al., 2018). Difficulties in IER can lead to unstable relationships with romantic partners, friends, and others in one's social group. This is particularly important in emerging adulthood, a transitional developmental period from adolescence to adulthood, encompassing ages 18-29. It is a critical time when emotional development is stabilizing and lifelong ER patterns are becoming established (Arnett, 2000).

Another area of ER that impacts effective strategy use is ER variability (ERV). ERV is the ability to access different ER strategies and apply them as required to meet situational contexts and needs (Aldao et al., 2015; Bonanno & Burton, 2013). Greater ER variability is positively associated with psychosocial well-being and is negatively associated with psychopathology. Alternatively, rigid use of ER strategies irrespective of context (i.e., less ER variability) may result in decreased responsiveness to situational demands and is a hallmark of psychological disorders (Aldao, 2013).

The present study has two overarching goals. Firstly, the validity of a new measure, the DIRE (Dixon-Gordon et al., 2018), was tested using confirmatory factor analysis, a *statistical technique that clusters observed variables to underlying (latent) construct(s) based on a theoretical understanding of those construct(s),* convergent validity (i.e., positive correlations of

the scale to other measures of the same construct), and divergent validity (i.e., negative correlations of the scale to other scales of different, unrelated constructs) (Boateng et al., 2018; Raykov & Marcoulides, 2011). The DIRE scale differs from other measures of emotion regulation for two reasons: 1) it focuses on difficulties in IER and 2) it includes contextual scenarios as part of its structure. Secondly, the DIRE scores were used to develop participant ER variability scores that captured the repertoire of strategies participants use in a contextually relevant way. These next sections provide additional background information relevant to our study objectives.

Emotion Regulation

Early research on ER originated from psychodynamic theories of emotion such as Freud's defense mechanisms or cognitive/socio-emotional theories of coping, attachment, or self-regulation (Gross, 2014). However, by the early 1990s, a larger body of research on ER was established, including a widely accepted definition of ER: "Emotion regulation refers to the process by which individuals influence which emotions they have, when they have them, and how they experience and express these emotions" (Gross, 1998, p.275). Once ER was established as its own research area, models were proposed to conceptualize and organize (i.e., explain and predict what was involved in the ER process) its different elements. Currently, the most influential and widely used model is the *Process Model of Emotion Regulation* (Gross, 1998; Webb et al., 2012).

The Process Model, developed by Gross (1998), is an information processing view of ER that identifies stages of emotion generation when regulatory strategies can be applied. The

Process Model identifies five stages when ER is applied: situation selection, situation modification, attentional deployment, cognitive appraisal, and response modification. These strategies are broadly grouped as *antecedent – focused* (i.e., occurring before the emotion is experienced) or response-focused (i.e., occurring after emotional experience). The grouping of ER strategies as antecedent-focused or response-focused parallels their grouping as adaptive or maladaptive (Aldao, 2013; Gross, 2014). Strategies that are adaptive have a negative relationship with symptoms of psychopathology (e.g., anxiety, depression) while those that are maladaptive are positively correlated. It is also important to note that strategies can be effective in the short-term (e.g., avoiding social gatherings because you feel nervous about negative evaluations by others) but be problematic in the long-term (e.g., continually avoiding social gathering leads to social isolation) (Aldao, 2013; Aldao & Nolen-Hoeksema, 2012; Dixon-Gordon et al., 2015).

There are a variety of ER strategies and these strategies are grouped based on where in the Process Model they are applied. For instance, avoidance would be classified as situation selection, distraction as attentional deployment, reappraisal as a form of cognitive appraisal and suppression as response modulation (Aldao & Nolen-Hoeksema, 2012; Webb et al., 2012). The most widely studied strategies are avoidance, acceptance, distraction, reappraisal, and suppression (Aldao et al., 2010). In general, a strategy that is applied earlier in the Process Model sequence is more successful than one applied later in the process (Aldao, 2013; Gross, 1998). Thus, antecedent-focused strategies are more successful because they are applied before an emotion is activated whereas response-focused strategies are less successful because they occur after an emotion has been experienced. For example, suppression is one of the least

effective strategies because it occurs after an emotion has been expressed (Aldao, 2013; Gross, 1998). However, more recent research has challenged this simplified view of adaptive versus maladaptive strategies because it does not account for the role of context in ER (Aldao, 2013; Aldao & Nolen-Hoeksema, 2012). Gratz and Roemer (2004) have stated that without knowing the specific situational or contextual background it is difficult to know whether a person can effectively regulate their emotions. Additionally, psychological disorders are linked to rigid and inflexible use of ER strategies without consideration or adjustment to the environment (Aldao, 2013; Gross, 1998).

Context

Context has been defined as "… all the circumstances that surround a given process" and can include things such as situation, ER goals, and cultural background (Aldao, 2013, p.156). Although context plays a crucial role in ER research, to date, studies on the role of context in strategy choice or ER outcomes have largely been theoretical and lack sufficient empirical investigation (Aldao, 2013). Context is important to consider because it can affect whether an ER strategy is viewed as adaptive or maladaptive. For example, suppression is considered a maladaptive strategy; however, that is likely true only if considered among research participants with a Western background (i.e., cultural context). For example, in those with an Asian cultural background, suppression can be adaptive (Aldao et al., 2015; Soto et al., 2010). Context has also been shown to affect cognitive reappraisal, a strategy thought to be adaptive. In a study by Van't Wout, Chang, and Sanfey (2011), participants who were instructed to use reappraisal accepted more unfair offers than those instructed to use suppression, or a control

group given no instruction. More recently, one contextual lens that has received increased attention is interpersonal emotion regulation (IER).

Interpersonal Emotion Regulation (IER)

IER represents the social aspect of ER and is the process by which we use others to regulate our emotions (Zaki & Williams, 2013). As social animals, humans experience and regulate emotions predominately in social contexts (Barthel et al., 2018; Niven et al., 2012). Evidence for the social nature of emotion regulation is found as early as child-parental attachment (Bowlby, 1973). This research shows that our early bonding relationships establish attachment styles (i.e., secure, insecure, avoidant, and ambivalent) that have an enduring influence on future relationship patterns and form the basis for ER use and needs (Barthel et al., 2018; Williams et al., 2018; Cronin et al., 2018). Disruptions in the formation of these attachments have lasting effects and can be risk factors for psychopathology including anxiety, depression, and borderline personality disorder (Bowlby, 1973**;** Shaver & Mikulincer, 2014; Dixon-Gordon et al., 2016). The importance of these interactions continues past childhood and adolescence into emerging adulthood. During emerging adulthood, interpersonal relationships contribute to the formation of an independent identity as emerging adults rely less on parents as providers of support and coping and more on peers and others in their social group (Arnett, 2000; Brewer at al., 2016; Zimmerman et al., 2014). Difficulty with IER during this developmentally sensitive period may impact future social well-being (Brewer et al., 2016). Despite the importance of IER throughout the lifetime, there is a lack of research into emotion regulation processes across development, particularly among emerging adults (Barthel et al., 2018; Gratz & Roemer, 2004).

Although conceptual frameworks that outline the features of IER exist (i.e., Zaki & Williams, 2013), they do not address issues related to difficulties with IER or how these difficulties contribute to symptoms of psychopathology (Dixon-Gordon et al., 2018). This is of particular concern as interpersonal interactions are one of the most important triggers of emotion (Aldao & Tull, 2015; Barthel et al., 2018; Dixon-Gordon et al., 2018**;** Dixon-Gordon et al., 2015; Gross, 1998). Moreover, Dixon-Gordon and colleagues (2018) observed that existing research did not distinguish adaptive from maladaptive IER strategies and that no measure existed to capture these distinctions or the relationship between difficulty with IER and subsequent psychopathology. Thus, to address these deficiencies, Dixon-Gordon and colleagues (2018) developed the Difficulties in Interpersonal Regulation of Emotion (DIRE) scale.

Difficulties in Interpersonal Regulation of Emotion (DIRE) Scale

The DIRE is a self-report scale that measures difficulties in the use of IER strategies. Dixon-Gordon et al. (2018) developed the scale to capture the use of IER strategies in relation to psychopathology and did so by considering the *external contexts* in which these strategies are applied. Factor analysis identified a two-factor structure for the interpersonal strategies: reassurance-seeking and venting and a two-factor structure for the intrapersonal strategies: acceptance and avoidance (Dixon-Gordon et al., 2018). The interpersonal strategies used are measured across three socially stressful scenarios: *task, romantic, and social-oriented*. The authors found that both reassurance seeking and venting were positively associated to borderline personality disorder and anxiety, while only reassurance seeking was associated to depression (Dixon-Gordon et al., 2018).

It is important to validate the DIRE because it is the only scenario-based scale that measures difficulties in IER in an adult population and understanding IER is critical for many reasons. The DIRE includes a mix of intrapersonal and interpersonal strategies that allows for an examination of how these strategies are used, if they are used alone or in combination, and how their use varies by context. An important test of validity is construct validity (i.e., determining whether a scale measures the constructs it is meant to measure) and is comprised of confirmatory factor analysis, convergent validity and divergent validity (Boateng et al., 2018; Raykov & Marcoulides, 2011). Thus far, no validation studies have been conducted on the DIRE and validation is important and necessary to ensure that the DIRE is measuring IER and can be used to draw conclusions about IER use in research studies. As the field of IER research expands, a valid measure of IER is critical to use (Dixon-Gordon et al., 2018; Hoffman et. al., 2016). Additionally, the initial development and validation of this scale by the Dixon-Gordon and colleagues (2018) included a predominately White/Caucasian (70.6%) sample of adults between the ages of 19 – 86 (M_{Age} = 36.58, *SD* = 12.05). Validation of this scale on a diverse university sample, as in our study, would increase its overall generalizability and applicability.

Another reason to validate the DIRE is that given the detrimental impact of the COVID-19 pandemic on developing young adult relationships (Horigian et al., 2021; Lee et al., 2020) and how youth use relationships to manage their emotion, understanding the impact of the pandemic on IER can help researchers, educators, families, and clinicians support young people as they navigate a transition back to in-person relationships, as well as address concerns that may have arisen while relying on online social support during the pandemic. Thus, validating

the DIRE scale would strengthen its use in studies examining ER among emerging adults during and transitioning out of the pandemic.

Emotion Regulation Variability (ERV)

The structure of the DIRE also provides an opportunity to test the concept of emotion regulation variability (ERV). ERV refers to the range of strategies available to use in any given situation (Aldao et al., 2015; Blanke et al., 2020; Bonanno & Burton., 2013). It is also related to a concept known as ER flexibility. ERV subsumes ER flexibility and refers to the repertoire of strategies that are available whereas flexibility refers to the ease with which these strategies can be applied as needed (Aldao et al., 2015; Blanke et al., 2020). Both variability and flexibility are considered in relation to situational demands and their adaptiveness is based on their ability to meet regulatory goals (Aldao et al., 2015).

Although there is a paucity of research in this area of ER, available research shows that greater variability and flexibility are associated with increased psychological well-being and mental health (Aldao et al., 2015; Blanke et al., 2020**).** For example, in a study on student resiliency following a school shooting, students with access to a greater number of ER strategies showed greater resilience than those with access to fewer strategies. Further, those with access to fewer strategies experienced more traumatic stress (Bonanno & Burton, 2016). These findings indicate that adaptiveness may be more of a function of greater access to ER strategies and the application of those strategies in a contextually relevant way than on the individual strategies themselves.

As such, the DIRE scale was used to develop an ER variability score. This score can be used to investigate the relationship between ER variability and symptoms of psychopathology and what these relationships indicate about the role of variability in determining the adaptiveness of emotion regulation strategies. In this way, the DIRE scale may better capture the complexity of ER repertoire (Aldao, 2013; Blanke et al., 2020).

Implications

There are several implications to validating the DIRE scale. Firstly, the DIRE scale offers an important way to progress current understanding of ER processes by including context as part of its measurement structure. As context has definitionally and theoretically been identified as a key variable in the ER process, it is important to account for it in measures of ER strategy use (Aldao, 2013). Validating this scale would provide evidence of its psychometric integrity and will allow for the collection of contextually grounded ER empirical data. This data can then provide support to existing theories of ER or create the foundation from which revised theoretical conceptualizations can be made.

Secondly, the DIRE can provide information on ERV in a contextually relevant way. As far as we know, this is the first known study that has examined ERV using a measure that has context incorporated into its structure. Our aim to develop an ERV score would allow for an understanding of not just which strategies are used but how the repertoire of available strategies interacts with contextual demands to meet regulatory goals.

Thirdly, the validation of a scale that examines difficulties with IER is important particularly for the developmentally sensitive period of emerging adulthood. As previously

stated, interpersonal interactions are an important means by which emotions are regulated. Creating a scale that includes difficulties with IER and one that is contextually grounded will be an invaluable means of understanding such an important part of regulatory experience.

Thus, in these ways, validating the DIRE creates a new means of collecting reliable and more complete ER data that can broaden our understanding of ER strategy use in contextually relevant ways. This understanding can broaden existing models of ER and further inform clinical interventions in a way that better reflects the complexity of real-world experiences of ER (Aldao, 2013).

Objectives

The current study involves validating the DIRE scale using three different strategies. The first objective of this study was to test the validity of the DIRE scale using confirmatory factor analysis to determine if the two-factor structure (i.e., reassurance-seeking and venting) found by Dixon and colleagues (2018) is replicated. The second objective was to conduct correlational analyses between ER and both psychopathology and well-being, using measures of inter- and intrapersonal strategy use, emotion dysregulation, depressive symptoms, subjective happiness, and positive mental health. This provides a test of the convergent and divergent validity of the DIRE to measures of similar and differing constructs The third objective is to use the multiple scenario structure and multiple regulation strategy options of the DIRE to develop an ERV score (e.g., measure of variance) and examine the relationship of this score to the psychopathology and well-being measures listed above.

Hypotheses

We hypothesized that:

1) Confirmatory factor analysis of the DIRE scale would replicate the two-factor model of venting and reassurance-seeking for interpersonal strategies and acceptance and avoidance for intrapersonal strategies.
2) Difficulties in interpersonal emotion regulation would be positively related to symptoms of psychopathology and negatively related to measures of well-being.
3) The DIRE would be positively related to related measures of related constructs (i.e., convergent validity) and negatively correlated to unrelated constructs (i.e., divergent validity)
4) Higher emotion regulation variability scores would be negatively associated with symptoms of psychopathology and positively associated with well-being.

Method

Participants

This study and the data set used are part of a larger project. Data collection occurred between December 2018 and April 2019. Participants were recruited using the York University's Undergraduate Research Participant Pool (URPP) and LISTSERVs. A total of 790 students of the 1,036 students recruited were included after exclusion criteria were applied. Participants results were excluded if they were outside the age range of 18 – 29 (emerging adults); if less than 70% of the study measures were completed; or if the study was completed in less than 10 minutes. Participants received course credit or were entered into a draw for one of five $25 Tim

Horton's gift cards. Ethics approval for this study was received from the York University Research Ethics Board.

Measures

The *Cognitive Emotion Regulation Questionnaire* (CERQ; Garnefski & Kraaji, 2007; Appendix D) is a 36-item self-report scale measuring the use of cognitive emotion regulation strategies in the face of negative or stressful events. Each item is rated on a 5-point Likert scale ranging from 1 (*never*) to 5 (*always*). Scores of the items within each subscale were summed to give a strategy score, with higher scores representing greater use of that strategy. In the current study, all subscales have acceptable to good internal consistency: positive reappraisal, Cronbach's $\alpha = .82$; acceptance, $\alpha = .73$; rumination, $\alpha = .71$; self-blame, $\alpha = .83$; catastrophizing, $\alpha = .75$.

The *Interpersonal Emotional Regulation Questionnaire* (IERQ; Hoffman et al., 2016; Appendix E) is a 20-item self-report measure that is used to assess how individuals use others to regulate their emotions. It is composed of four subscales each containing five items: 1) enhancing positive affect, 2) perspective taking, 3) soothing, and 4) social modelling. Participants rated how true each statement was on a scale from 1 (*not true for me at all*) to 5 (*extremely true for me*). Scores were summed across the five-items within each subscale with higher scores representing greater use of the strategy subscale. In the current study, all subscales showed good to excellent internal consistency: enhancing positive aspect subscale, Cronbach's $\alpha = .84$; perspective taking, $\alpha = .82$; soothing, $\alpha = .90$; social modelling, $\alpha = .87$.

The *Difficulties in Emotion Regulation Scale* (DERS; Gratz & Roemer, 2004; Appendix F) is a 36-item scale that asses six aspects of emotional dysregulation: 1) non-acceptance of emotional responses, 2) difficulties engaging in goal-directed behaviour, 3) impulse control difficulties, 4) lack of emotional awareness, 5) limited access to ER strategies, and 6) lack of emotional clarity. Each item is rated on a scale from 1 (*almost never*) to 5 (*almost always*). All items are tallied to create a total emotional dysregulation score with higher scores indicating greater difficulties with ER. In the current study, DERS has excellent internal consistency with a Cronbach's $\alpha = .94$.

The *Center for Epidemiologic Studies Depression Scale – Revised* (CESD-R; Eaton, Smith, Ybarra, Muntaner, & Tien, 2004; Appendix G) is a 20-item self-report measure of depressive symptoms. Items are rated on a four-point scale from 1 (*rarely or none of the time*) to 4 (*most or all the time*) to measure the frequency participants felt the way described in the item (i.e. "I was bothered by things that don't usually bother me"). A total score was obtained by summing all responses to the items. Higher scores indicate more depressive symptoms. In the current study, the CESD-R showed excellent internal consistency with a Cronbach's $\alpha = .95$.

The *Subjective Happiness Scale* (SHS; Lyubomirsky & Lepper, 1999; Appendix H) is a 4-item measure of subjective happiness. Participants rated their level of happiness or agreement with a statement on a 7-point scale with a score of 1 (indicating little to no agreement) to 7 (showing the most agreement). Scores from the 4-items were averaged to give a subjective happiness score. Higher scores indicate greater subjective happiness. In the current study, the SHS demonstrated good internal consistency with a Cronbach's $\alpha = .81$.

The *Mental Health Continuum Short Form* (MHC-SF; Keyes, 2002; Appendix I) is a 14-item measure that assesses the frequency with which participants experienced positive mental health in the past month. The items represent three types of well-being (emotional, psychological, and social) and were rated on a 6-point scale ranging from 1 (*never*) to 6 (*everyday*). Mean scores were calculated with higher scores indicative of greater well-being. In the current study, the MHC-SF had excellent internal consistency with a Cronbach's $\alpha = .93$.

The *Difficulties in Interpersonal Regulation of Emotion Scale* (DIRE; Dixon-Gordon, Haliczer, Conkey, & Whalen, 2018; Appendix J) is a 21-item measure of interpersonal emotion dysregulation that assess two interpersonal (i.e., venting, reassurance seeking) and two intrapersonal (i.e., accept, avoid) emotion regulation strategies across three contexts (i.e., task, romantic, social). Participants rated their level of distress for each scenario on a continuum between 0 (not at all distressed) to 100 (extremely distressed). Participants then rated how likely they were to use a strategy described in the item to make them feel better (i.e., "keep asking for reassurance") on a 5-point scale ranging from 1 (very unlikely) to 5 (very likely). Scores were summed across the within each subscale with higher scores representing greater use of the strategy subscale. In the current study, all subscales have acceptable to good internal consistency: accept subscale, Cronbach's $\alpha = .79$; avoid, $\alpha = .65$; venting, $\alpha = .70$; reassurance seeking, $\alpha = .83$.

Procedure

All participants received a consent form and provided online consent prior to completing the study. Participants completed all of the above questionnaires online, in addition to providing demographic information. The order of the questionnaires was randomized for

each participant. The online questionnaire was hosted on Qualtrics and took approximately 30 minutes to complete. Participants received online written debriefing information and a list of mental health resources at the end of the study.

Statistical Analysis

The statistical analysis for this study included:

1. Confirmatory factor analysis of the DIRE scale (objective 1)
2. Correlational analysis of (objective 2):
    a. DIRE scores and scores on measures of depressive symptoms and well-being
    b. Scores from the various measures to each other
    c. ERV and DIRE scores, measures of emotion dysregulation, depressive symptoms, and well-being
3. Developing an ERV score by calculating the standard deviation of mean values of strategies endorsed (objective 3):
    a. *Between-context* ERV - a mean score for each of the three scenarios (i.e., task, romantic, and social)
    b. *Within-context* ERV - a mean score for each ER strategy across all three scenarios (Niven et al., 2012; Blanke et al., 2013; Aldao et al., 2015)

Results

Descriptive Statistics

Demographic and descriptive statistics for all variables are displayed in Tables 1 and 2, respectively. This sample was composed of early emerging adults (M_{age} = 20.40, SD_{age} = 2.13),

largely female (80.73%), and ethnically diverse (Caucasian 25.06%; South Asian 22.42%; Asian 18.26%; Middle Eastern 12.09%; Black 8.31%; West Indies 5.03%; Hispanic 3.02%, Mixed Race 2.77%, Other 1.51%).

Table 1

Demographic Characteristics of Participants

Demographic Variables	*n*	Percentage (%)
Gender		
Female	641	80.73
Male	144	18.14
Other	3	.004
Ethnicity		
White/Caucasian	199	25.06
South Asian (e.g. India, Pakistan, Afghanistan)	178	22.42
Asian (e.g. China, Japan) and Southeast Asian (i.e. Filipino, Vietnamese)	145	18.26
Middle Eastern	96	12.09
Black	66	8.31
West Indies (e.g. Trinidad and Tobago, Guyana)	40	5.03
Hispanic	24	3.02
Mixed race	22	2.77
Other	12	1.51

Note. N = 794

Table 2

Descriptive Statistics of Study Measures

Variable	M (SD)	Scale Range
DIRE		
Accept	10.60 (2.88)	3 – 15
Avoid	18.82 (4.74)	7 - 30
Venting	15.84 (4.88)	7 - 30
Reassurance seeking	17.99 (5.77)	7 - 30
CERQ		
Acceptance	13.25 (3.35)	4 - 20
Self-Blame	11.79 (3.75)	4 - 20
Rumination	12.79 (3.40)	4 - 20
Positive reappraisal	13.13 (3.86)	4 - 20
Catastrophizing	9.92 (3.54)	4 - 20
IERQ		
Enhancing positive affect	19.18 (4.14)	5 - 25
Perspective taking	13.64 (4.81)	5 - 25
Soothing	15.04 (5.46)	5 - 25
Social Modelling	16.70 (4.74)	5 - 25
DERS	95.21 (24.07)	36 – 180
CESD-R	43.78 (18.04)	20 – 100
MHC-SF	39.51 (14.14)	0 - 70
SHS	17.89 (5.10)	4 – 28

Note. DIRE = Difficulties in Interpersonal Regulation of Emotion, CERQ = Cognitive Emotion Regulation Questionnaire, IERQ = Interpersonal Emotion Regulation Questionnaire, DERS = Difficulties in Emotion Regulation Scale, CESD-R = Center for Epidemiologic Studies Depression Scale - Revised, MHC-SF = Mental Health Continuum – Short Form, SHS = Subjective Happiness Scale.

Confirmatory Factor Analysis

For objective one, confirmatory factor analysis was conducted on the two interpersonal factors of Vent and Reassurance Seeking and the two intrapersonal factors of Accept and Avoid. A test of the model of interpersonal factors resulted in adequate fit indices: RMSEA [90% CI] = .09 [.078 - .097], SRMR = .05, CFI = .90, TLI = .83. Standardized factor loadings for interpersonal indicators ranged from .385 to .603 for Vent and from .567 to .693 for Reassurance Seeking (See Fig. 1). A test of the intrapersonal factors resulted in adequate fit indices: RMSEA [90% CI] = .07 [.056 - .084], SRMR = .045, CFI = .94, TLI = .87. Standardized factor loadings for intrapersonal indicators ranged from .707 to .817 for Accept and from .281 to .501 for Avoid (See Fig. 2).

Correlational Analysis

For objective two, we conducted correlational analysis between all variables and results are displayed as bivariate correlations in Table 3. Higher correlations for the DIRE scale include DIRE Avoid and DERS (r = .274), DIRE Vent and IERQ Perspective Taking and Soothing (*r* = .283 and .422, respectively), DIRE Reassurance Seeking with all four elements of the IERQ scale (Enhancing Positive Affect, *r* = .347; Perspective Taking, r =.339; Soothing, *r* = .555; Social Modeling, *r* = .365) and with DIRE Vent (*r* = .470). Other notable correlations include the relationships between emotion dysregulation and depression (*r* = .619) and inversely with measures of well-being (MHC-SF (*r* = -.504), and SHS (*r* = -.546)). These correlations show the moderate to strong relationship between emotion dysregulations and mental health outcomes.

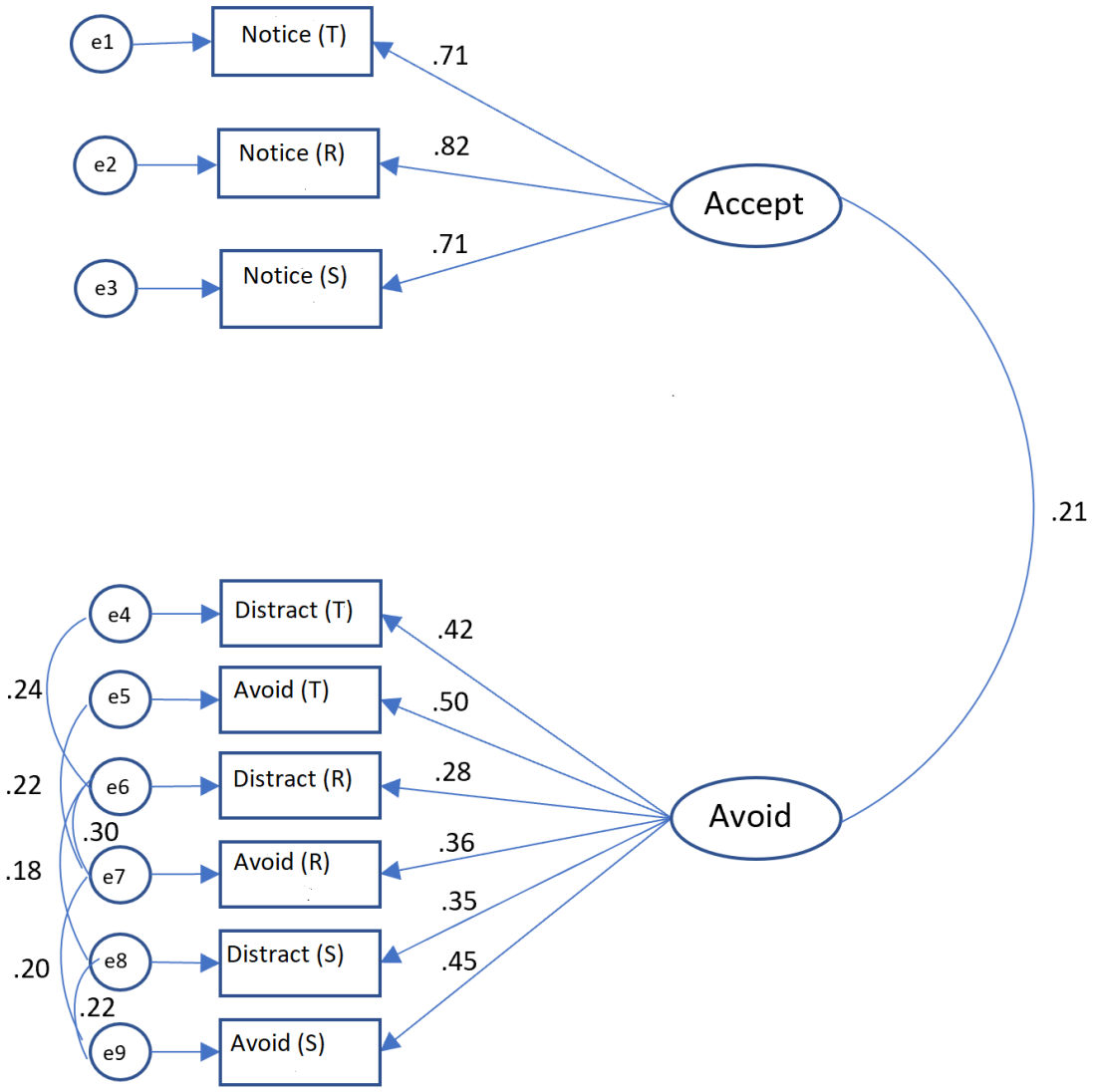
Figure 1

Confirmatory Factor Analysis of the DIRE Two-Factor Model of Interpersonal Strategies

Note. Indices yield adequate fit for DIRE Vent and Reassurance Seeking: RMSEA [90% CI] = .09 [.078 - .097], SRMR = .05, CFI = .90, TLI = .83. Raise Voices = raise voice or criticize, Complain = complain to coworkers or classmates/friends or acquaintances/mutual acquaintances, Contact = keep contacting friends and loved ones, Reassure = keep asking for reassurance. T = task scenario, R = romantic scenario, S = social scenario.

Figure 2

Confirmatory Factor Analysis of the DIRE Two-Factor Model of Intrapersonal Strategies



Note. Indices yield adequate fit for DIRE Accept and Avoid: RMSEA [90% CI] = .07 [.056 - .084], SRMR = .045, CFI = .94, TLI = .87. Notice = simply notice your feelings, Distract = distract yourself from how you are feeling, Avoid = avoid feeling or showing your distress. T = task scenario, R = romantic scenario, S = social scenario.

Table 3

Summary of Pearson Correlation for Study Measures

Variable	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.
1. IERQ-E																
2. IERQ-PT	.304**															
3. IERQ-S	.470**	.561**														
4. IERQ-SM	.477**	.477**	.560**													
5. CERQ-A	.144**	-.003	.001	.132**												
6. CERQ-SB	.085*	.081*	.129**	.148**	.375**											
7. CERQ-R	.240**	.095*	.269**	.273**	.472**	.544**										
8. CERQ-PR	.204**	.267*	.111**	.308**	.332**	-.038	.194**									
9. CERQ-C	.072	.259**	.327**	.189**	.277**	.519**	.495**	-.054								
10. DERS	-.039	.019	.115**	.049	.123**	.479**	.329**	-.294**	.444**							
11. CESD-R	-.114**	-.060	.019	-.015	.192**	.402**	.335**	.194**	.357**	.619**						
12. MHC-SF	.238**	.306**	.181**	.206**	-.103**	-.264**	-.153**	.390**	-.195**	-.504**	-.540**					
13. SHS	.140**	.228**	.067	.146**	-.114**	-.300**	-.244**	.373**	-.260**	-.546**	-.554**	.658**				
14. DIRE-Acc	.203**	.113**	.117**	.198**	.085*	-.016	.151**	.230**	.013	-.129**	-.021	.128**	.090*			
15. DIRE-Av	.033	.041	-.037	.028	.149**	.248**	.110**	-.046	.133**	.274**	.241**	-.200**	-.184	.081*		
16. DIRE-V	.203**	.283**	.422**	.204**	-.037	.032	.109**	.001	.242**	.195**	.051	.043	.012	.049	.028	
17. DIRE-RS	.347**	.339**	.555**	.365**	.106**	.135**	.267**	.164**	.220**	.152**	.052	.125**	.057	.223**	.087*	.470**

Note. IERQ = Interpersonal Emotion Regulation Questionnaire, E = Enhancing positive affect, PT = Perspective taking, S = Soothing, SM = Social modelling, CERQ = Cognitive Emotion Regulation Questionnaire, A = Acceptance, SB = Self=blame, R = Rumination, PR = Positive reappraisal, C = Catastrophizing, DERS = Difficulties in Emotion Regulation Scale, CESD-R = Center for Epidemiologic Studies Depressions Scale - Revised, MHC -SF = Mental Health Continuum – Short Form, SHS = Subjective Happiness Scale, DIRE = Difficulties in Interpersonal Regulation of Emotion, Acc = Accept, Av = Avoid, V = Venting, RS = Reassurance seeking.

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

Convergent Validity

Correlations between DIRE interpersonal scales and IERQ subscales were weak to moderate. DIRE Vent and IERQ subscale correlations ranged from r = .203 – .422 with the strongest correlation associated with IERQ Soothing. DIRE Reassurance Seeking and IERQ subscale correlations ranged from r = .367 – .555 with the strongest correlation associated with IERQ Perspective Taking.

Correlations for DIRE intrapersonal scales and CERQ were weak to moderate (r = .339 - .555). DIRE Accept had significant and positive correlations for three of the five CERQ subscales: Acceptance (r = .085), Rumination (r = .151), and Positive Reappraisal (r = .230). DIRE Avoid had significant and positive correlations for four of the CERQ subscales: Acceptance (r = .149), Self-blame (r = .248), Rumination (r = .110), and Catastrophizing (r = .133).

Correlations between the interpersonal strategies and emotion dysregulations were all significant except for DIRE Vent and DERS Awareness and Clarity subscales and DIRE Reassurance Seeking and Clarity subscale. DIRE Vent and Reassurance Seeking were strongly and positively associated with emotion dysregulation but were not associated with depression or well-being. However, DIRE Reassurance Seeking was strongly and negatively associated with DERS Awareness subscale and strongly and negatively associated with well-being as measured by MHC-SF.

For intrapersonal strategies, DIRE Avoid was strongly and positively associated with emotion dysregulation and depression, and negatively associated with well-being. DIRE Accept,

on the other hand, was strongly and negatively associated with emotion dysregulation and depression, and strongly and positively associated well-being.

ERV

For objective three, ERV was calculated between-contexts (i.e., variability in each scenario) and within-contexts (i.e. variability of each strategy). We used standard deviation (SD) as our measure of variability as suggested by Aldao et al., (2015) and Blanke et al., (2013). *Between-context* ERV scores were calculated by adding the ratings for each strategy across scenarios. *Within-context* ERV scores were calculated by adding the rating of each endorsed strategy within each scenario. The mean *between-context* ERV score for each strategy (i.e. Accept, Avoid, Vent, Reassurance Seeking) and mean *within-context* ERV for each scenario (i.e. Task, Romantic, Social) were calculated and used for correlations with emotion dysregulation, depression, and well-being measures. *Between-context* and *within-context* ERV statistics and correlations are displayed in Tables 4 and 5, respectively.

Mean *between-context* ERV scores show that DIRE Accept had the lowest variability followed by Reassurance Seeking, Avoid, and Vent. This indicates that DIRE Accept was a strategy that was endorsed most often regardless of context. Alternatively, higher variability for DIRE Vent showed that it was not used for every scenario and may have been used if it met situational demands.

For *within-context* ERV, the Task scenario had the highest variability while the Romantic scenario had the lowest. Higher variability in Task and Social scenarios was negatively associated with well-being. Although variability in the Romantic scenario was not significantly

correlated with depression or well-being, the direction of the correlations was negative similar to the other scenarios. All three scenarios were associated with DERS Goals subscale and negatively associated with DERS Awareness subscale. The Social scenario was also negatively associated with the DERS Impulse subscale.

Table 4

Correlations of Between-Context Variability with Measures of Interest

	DIRE Accept	DIRE Avoid	DIRE Vent	DIRE Reassure
Mean of $ERV_{Between}$	.59	.78	.75	.70
DERS				
Total	.005	.020	.017	-.019
Non-acceptance	-.012	-.060	-.046	.005
Goals	-.019	.053	.068	-.007
Impulse	-.008	.006	.033	-.014
Strategies	-.029	-.057	-.069	-.035
Awareness	.095**	.048	.024	-.019
Clarity	.016	.037	.003	-.005
CESD-R	.038	.027	.025	.002
MHC-SF	-.009	-.041	.011	.014
SHS	.044	-.029	-.090	.011

Note. DERS = Difficulties in Emotion Regulation Scale, CESD-R = Center for Epidemiologic Studies Depression Scale - Revised, MHC-SF = Mental Health Continuum – Short Form, SHS = Subjective Happiness Scale.

**$P < .01$

Table 5

Correlations of Within-Context Variability with Measures of Interest

	DIRE Task	DIRE Romantic	DIRE Social
Mean of ERV_{Within}	1.24	1.16	1.21
DERS			
Total	-.025	-.051	-.028
Non-acceptance	.036	-.003	.016
Goals	.100**	.116*	.084*
Impulse	-.072	-.054	-.103**
Awareness	-.089*	-.121**	-.082*
Strategies	.007	-.030	.011
Clarity	-.005	-.061	-.009
CESD-R	.006	-.023	.048
MHC-SF	-.078*	-.036	-.142**
SHS	-.068	-.014	-.145**

Note. DERS = Difficulties in Emotion Regulation Scale, CESD-R = Center for Epidemiologic Studies Depression Scale - Revised, MHC-SF = Mental Health Continuum – Short Form, SHS = Subjective Happiness Scale.

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

Discussion

In this study, we examined the validity of a new measure, the DIRE scale using confirmatory factor analysis and convergent and divergent validity testing. Participants were emerging adults who completed online questionnaires on IER strategies use, emotion dysregulation, depression, subjective happiness, and positive mental health. Our objectives were to examine the construct validity the DIRE scale 1) using confirmatory factor analysis to replicate the two-factor structure for IER of reassurance-seeking and venting, 2) by examining the relationship of inter- and intrapersonal ER use with emotion dysregulation, depressive symptoms, and well-being, and 3) by using the DIRE scale to develop an ERV score (e.g., variance) and examine the relationship of this score to emotion dysregulation, depressive symptoms, and well-being.

In terms of our first objective, we used confirmatory factor analysis to validate the DIRE scale, which measures the interpersonal strategies of reassurance seeking and venting and the intrapersonal strategies of accept and avoid. Our confirmatory factor analysis results indicated that the two-factor structure of the DIRE scale was validated in this study's diverse emerging adult sample and replicates previous research findings (Dixon-Gordon et al., 2018). The confirmatory factor analysis showed that the two-factor IER structure of the DIRE scale, namely vent and reassurance-seeking subscales, had a moderate to strong relationship. More specifically, the items in the DIRE that represented reassurance seeking were positively and strongly related and grouped together, and the items that represented venting were positively and moderately to strongly related and grouped together. The strength and patterns of the scale items indicate that they are good representations of the IER strategies of reassurance

seeking and venting. These findings, along with the acceptable fit between our data and the model of reassurance seeking and venting in the confirmatory factor analysis, indicate that the structure of the DIRE provides a valid means of gathering data on difficulties with IER. In other words, our study showed that the DIRE scale is a valid and reliable measure of contextually relevant IER strategy use among a diverse sample of emerging adults**.**

In terms of our second objective, our study showed that reassurance seeking and venting were positively associated with emotion dysregulation, showing convergent validity with the measure of this construct, but neither measure was significantly associated with depressive symptoms, showing divergent validity to the measure of this construct. This indicates that use of reassurance seeking and venting were not associated with this specific type of psychopathology, namely depressive symptoms, in our sample**.** While some research has shown that excessive reassurance seeking is associated to depression and anxiety (Joiner and Metalsky, 2001), in our study not only was it not associated with psychopathology, but it was related to well-being. This does align with other studies that show that some amount reassurance seeking is helpful in that it allows a person to express their feelings and can thus be a way to connect with others (Dixon-Gordon et al., 2018; Kahn and Garrison 2009). This is an interesting finding because it distinguishes the adaptability of an ER strategy based on the degree to which a strategy is used. Therefore, for reassurance seeking, excessive use is related to psychopathology (in other studies) while non-excessive use can be adaptable and related to well-being (as in our study).

Lastly, in terms of our third objective, a test of validity using variance, we found that for *between-context variability* the only association identified was for DIRE Accept and the

awareness subscale of emotion dysregulation. Accept also had the lowest mean variability of all four strategies considered. Although research on the relationship between variability and psychological outcomes is limited, existing research shows that higher variability is associated with better outcomes, and lower variability is associated with worse outcomes (Aldao & Nolen-Hoeksema, 2012; Blanke et al., 2013). Thus, we would expect that low variability in the use of acceptance as an ER strategy would be associated with less positive outcomes; however, we found that acceptance was associated with lower dysregulation and with greater well-being. This may indicate that regardless of variability, acceptance may represent a strategy that universally meets situational demands and is associated with adaptive outcomes.

For *within-context ERV*, scores showed that greater variability in the Task and Social scenarios (i.e., more strategies were used) was associated with less well-being. This is an interesting finding because Task and Social had higher variability means and more variability is typically associated with more adaptive outcomes (Aldao et al., 2012). It should be noted that differences in variability have only been discussed in terms of individual ER strategies use and have not been considered in terms variability of different strategies used within different contexts. In general, lower variability is interpreted as the inflexible use of an ER strategy even when it may be ineffective at meeting regulatory goals. Greater variability, on the other hand, is associated with psychological flexibility, one aspect of which is the ability to adapt strategy use to situational demands (Kashdan & Rottenberg, 2010). Our findings may indicate that while variability in ER strategy use may itself be adaptive, variable use of strategies within a context may be maladaptive and could indicate difficulty in knowing which strategy best suits the demands of a particular situation.

Our findings, although differing from earlier findings, add to the growing body of research on variability and contribute valuable information on the formulation and refinement of theoretical frameworks of ER particularly those that incorporate both IER and context into their research paradigms. In this study, we validated the DIRE scale, a new measure of difficulties in IER that incorporates situational contextual into its measurement structure. We then examined the relationship of the IER strategies of reassurance seeking and venting and intrapersonal strategies of accept and avoid to measures of emotion dysregulation, depression, and well-being. Lastly, we used the DIRE to develop an ERV score and examined the relationship of this score to measures of emotion dysregulation, depression, and well-being.

Limitations and Future Directions

Our study contains limitations that warrant discussion. A first limitation is the use of self-report measures including the DIRE scale, which uses self-report of responses to hypothetical scenarios and ER strategy use. The use of self-report measures is subjective, and, thus, may introduce bias into data collection. One such bias is the social desirability bias, which is the tendency to want to represent a good impression of oneself to researchers (APA, 2020). For example, participants may only endorse ER strategies that they think are desirable (i.e., acceptance) over those that are undesirable (i.e., avoidance). If participants' responses are biased towards strategies that are perceived as desirable this may result in the overrepresentation of these strategies (and an underrepresentation of undesirable strategies) and may undermine tests of validity by artificially increasing the strength of these strategies in confirmatory factor analysis and tests of convergent and divergent validity.

One way to capture more realistic situational experiences of ER may be to use ecological momentary assessments (EMA). EMA is a study method that uses multiple daily prompts to have participants report on recent ER strategy use in response to real-time ER evoking experiences. This methodology increases the ecological validity (e.g., the generalizability of findings to real world settings) of the data collected and may account for context if participants are asked for a description of the situation or circumstance that required regulation (Shiffman et al., 2008). EMA may also provide a way to study ERV in natural settings. It may also allow us to understand the typical number of strategies that are used in similar situations and how variably a strategy is used across different situations.

A second limitation is that we only used a measure of depressive symptoms to capture maladaptive psychological outcomes. To gain a more complete picture of psychopathology related to ER we also needed to include a measure of anxiety. Anxiety is often linked to maladaptive ER use and is highly comorbid with depression (Aldao et al., 2009). Therefore, a study that includes measures of depression and anxiety would allow us to examine which ER strategies are related to depression, which are related to anxiety, and which are related to both. Another option may have been to include measures of positive and negative affect in this study. Measures of affect may capture outcomes of ER that may not meet the threshold of psychopathology or well-being but still provide valuable information on the relationship of ER strategy use and affect (i.e. Blanke et al., 2013).

Lastly, our study is limited in that our participants were mostly in their early 20s, despite efforts to recruit participants across the entire emerging adult period. As emerging adulthood spans to age 29 a study that contained older students may shed more light on emerging adults

as a whole. For example, the study could target graduate students up to age 29 to determine if there are any differences between ER strategy use between early and older emerging adults. This is an important population to study as recent research has shown increases in mental health concerns in graduate students over the last decade and include higher rates of anxiety, depression, and social isolation and were found to disproportionately affect minority students (CGS_JED Grad Student Health Report, 2021)

Implications

This study aimed to contribute to the empirical evidence on the nature of IER in emerging adults. By replicating and validating the DIRE, we have shown that its use is a viable way of collecting data on both inter- and intrapersonal ER strategies in a contextually relevant way. This may influence how future studies capture ER strategy use and may lead to the creation of more measurement scales that incorporate a scenario-based structure, thus providing more opportunity to study ER use in a more nuanced way.

This study also contributes exploratory work on ERV. This is an important but understudied area of ER research. By developing a greater understanding of the role that variability plays in ER we can expand models of ER to include this relevant construct. Aldao, Sheppes, and Gross (2015) have proposed that greater empirical evidence of ERV in a contextually relevant way will provide a more precise and sophisticated understanding of ER. We hope that the inclusion of ERV in our study will encourage its further investigation in future studies.

Our findings may also inform the development of prevention and intervention programs for college and university students. Emerging adulthood is a transitional developmental period that can be a time when students experience stress, mental health difficulties, and social isolation as they adjust to this new period in their lives. With a greater understanding of regulatory experiences of emerging adult teachers, administrators, and wellness facilitators can develop skills-based support programs to aid students during this transitional time. These could include interventions such as Acceptance and Commitment Training (ACT) (Hayes et al.,1999) that incorporate acceptance-based ER strategies as well as peer-based workshops that can facilitate the development of interpersonal skills necessary to navigate new relationships in university.

Conclusions

This study aimed to assess the role of context in ER by examining a new measure of IER, the Difficulties in Regulation of Emotion scale (DIRE), in emerging adults, a transitional period of identity formation and relationship development. Our findings were able to replicate the DIRE initial study and indicated that it is a valid measure of inter- and intrapersonal ER strategy use that accounts for the contexts that bring about ER. We showed that acceptance was a consistently adaptive strategy regardless of context, and its use was associated with lower ER dysregulation and depression symptoms, and with greater well-being. Alternatively, avoidance was associated with greater dysregulation and depression, and with lower well-being. In terms of IER, our study confirmed that venting was related to emotion dysregulation but did not show a relationship to depression or well-being. For reassurance seeking, we showed that although it was associated with emotion dysregulation, it was also positively related to well-being. This

finding could indicate that some degree of reassurance seeking is adaptive, but excessive use could be associated with maladaptive outcomes. We also conducted exploratory work on ERV looking at *between*- and *within-context* ERV, which, has not been previously studied. We hope that the findings of our current study contribute to the understanding of the role of IER in an emerging adult population and to the overall understanding of the relationship between ER strategy use, depression, and well-being.

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Appendix A

PSYC 1010 Consent Form

Study Name: How Managing Emotions Affects University Student Well-being

Researchers: Dr. Jennine S. Rawana, 131 BSB rawana@yorku.ca
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Purpose of the Research: The purpose of this study is to better understand how we manage our emotions and how this relates to other aspects of the lives of university students.

What You Will Be Asked to Do in the Research: This study consists of an online survey asking you about a broad range of behaviours and emotions encountered in university. For example, the survey will ask questions about your emotions, how you manage your emotions and, any feelings of low mood. Some demographic information is also collected. It will take approximately 30 minutes to complete the survey. You will be eligible to receive 0.5 PSYC 1010 course credit

Risks and Discomforts: There are no serious anticipated risks involved with completing the survey. Some people may become uncomfortable or distressed while completing some questions related to feelings of sadness or other questions. If you do become distressed, please contact the Counselling & Development Centre at York University (Phone: 416-736-5297; Location: N110 Bennett Centre for Student Services). At the end of the survey, you will also be given a list of other local counselling resources.

Benefits of the Research and Benefits to You: You may or may not benefit directly from this research. Benefits of participating in the study are an added percentage to your PSYC 1010 grade, gaining experience in psychology research, and helping us better understand what contributes to the well-being of university students.

Voluntary Participation and Withdrawal: Your participation in the study is completely voluntary and you may choose to stop participating at any time. Your decision not to volunteer, to stop participating, or to refuse to answer particular questions will not influence the nature of the ongoing relationship you may have the researchers, York University, or any group associated with this research either now, or in the future. If you stop participating, you will still be eligible to receive the promised pay/compensation for agreeing to be in the project. In the event you withdraw from the study, all associated data collected will be immediately destroyed wherever possible.

Confidentiality: All responses to these questions will be kept anonymous and confidential by the researchers. Data will be stored online on a secured website and will be transferred to Dr. Jennine Rawana's secure research server. Data files will be password protected. Data will be stored electronically for seven years, at which point the data will be destroyed. Data files without identifying information may be kept indefinitely at York University. **Confidentiality will be provided to the fullest extent possible by law.** Your name will not be linked with your answers and only research staff will have access to the
data.

Questions About the Research? If you have questions about the research in general or about your role in the study, please feel free to contact REACh Lab (reach@yorku.ca) or Dr. Jennine Rawana either by telephone at 416-736-2100 ext. 20771 or by e-mail (rawana@yorku.ca). This research has received ethics review and approval by the Human Participants Review Sub-Committee, York University's Ethics Review Board and conforms to the standards of the Canadian Tri-Council Research Ethics guidelines. If you have any questions about this process, or about your rights as a participant in the study, please contact the Sr. Manager & Policy Advisor for the Office of Research Ethics, 5th Floor, Kaneff Tower, York University (telephone 416-736-5914 or e-mail ore@yorku.ca).

Please select below that you "agree" or "disagree" to participate in this study. By selecting "agree" and continuing to complete this survey online, you are providing your consent to participate in this study and indicating you have read this Consent Form. Thank you.

Response Options:
I agree O or disagree O to participate in the Survey component of the study.

Appendix B

Debriefing Information for Research Participants

We would like to thank you for completing our **survey** study on feelings and behaviours experienced while attending university. The questions that you have answered pertaining to feelings and coping will help us identify some common problems and strengths experienced in undergraduates. Some of the questions in this survey may have made you feel uncomfortable or distressed. If you are or anyone you know is feeling depressed or psychologically distressed, there is help available. Below is contact information for some helpful services if you are feeling psychologically depressed or distressed.

Before we end this study, we would like to ask you not to talk about this study with anyone. There are many other people who have not participated in this study yet. If they hear from you or others about what the study is about, it may influence their responses. Our results may not be accurate. We hope that you will cooperate with us in this regard. Questions related to this study can be sent to reach@yorku.ca.

If you would like to learn more about emotion regulation, please read the following articles:

Gross, J. J., Richards, J. M., & John, O. P. (2006). Emotion regulation in everyday life. In D. K. Snyder, J. Simpson & J. N. Hughes (Eds.), Emotion regulation in couples and families: Pathways to dysfunction and health (pp. 13-35). Washington, DC: American Psychological Association. http://media.rickhanson.net/Papers/EmotRegDaily Life.pdf

Rawana, J. S., Flett, G. L., McPhie, M. L., Nguyen, H. T., & Norwood, S. J. (2014). Developmental trends in emotion regulation: A systematic review with implications for community mental health. *Canadian Journal of Community Mental Health, 33*, 31-44. http://ezproxy.library.yorku.ca/login?url=http://search.proquest.com/docview/1606064480?accountid=15
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Thank you.

Other Counselling Services in the GTA:

1. Toronto Psychological Services 416-531-0727 www.toronto-ps.com
2. Distress Centre of Toronto 416-408-4357 (HELP)
3. Help Line for All Youth HEYY 416-423-4399 (HEYY)
4. **Good 2 Talk (for post-secondary students)** 1-866-925-5454 http://www.good2talk.ca/
5. York University – Personal Counselling Services (PCS). Located in Counselling & Disability Services (CDS) in N110 Bennett Centre for Student Services, and can also be reached by phone at 416-736-5297 or http://pcs.info.yorku.ca/in-case-of-crisis/
6. The Freedom from Fear Foundation in Toronto is an organization established to help people with anxiety disorders. They have a network of support groups set up throughout Ontario 416-761-6006
7. Drug & Alcohol Registry of Treatment (DART)/Treatment info-line 1-800-565-8603
8. The National Eating Disorder Information Centre has a national register of private therapists, medical programs, and information 416-340-4156
9. Mood Disorders Association of Ontario 416-486-8046 OR call TOLL-FREE at 1-888-486-8236
10. A.C.C.E.S. (Accessible Community Counselling and Employment Services) Toronto: 416-921-1800 Scarborough: 416-431-5326 Mississauga: 905-361-2522
11. Family Services Association of Toronto 416-595-9230
12. For a list of more health, social, community, and/or government community resources/services, you can access it via www.211toronto.ca or you can dial 2-1-1 in Toronto 24 hours a day. This phone number is free, confidential, and the trained staff is multilingual

Appendix C

Demographics

What is your birth date? (e.g., January 1, 2006 = 01/06/2006) ____/_____/_____

Please indicate your sex (Check one) ¨ Male ¨ Female ¨ Intersex ¨ I prefer not to answer

Please indicate your identified gender (Check one) ¨ Male ¨ Female ¨ Other. Please specify:_____ ¨ I prefer not to answer

What year of undergraduate studies are you in?
o 1st year
o 2nd year
o 3rd year
o 4th year
o Other. Please specify: _____

Where do you live?
o Parents/guardians home
o Residence
o Off campus
o Other. Please specify: _

Please indicate your ethnicity (Check one)
o White/Caucasian
o Black
o Asian (e.g., China, Japan, etc)
o Indigenous
o Middle Eastern
o South-Asian (e.g., India, Pakistan, etc)
o West Indies (e.g., Trinidad and Tobago, Guyana, etc)
o Hispanic
o Other: _____
o I prefer not to answer

Were you born in Canada? (check one) ¨ YES ¨ NO

If "NO": A) How long have you lived in Canada? __ (years)

B) What country were you born in? __

Which of the following best describes your current relationship status?

o Not dating
o Dating several people
o Dating one person exclusively
o Engaged
o Married
o Married but separated
o Divorced
o Widowed

How long have you been dating/in a relationship? _____ (please specify in weeks)

Appendix D

The Cognitive Emotion Regulation Questionnaire (CERQ)

Everyone gets confronted with **negative or unpleasant experiences** and everyone responds to them in his or her own way. By the following questions, you are asked to indicate what you generally think, when you experience negative or unpleasant events. Please read the sentences below and indicate how often you have the following thoughts by circling the most suitable answer.

	Almost Never	Sometimes	Regularly	Often	Almost Always
I think that I have to accept That this has happened	O	O	O	O	O
I often think about how I feel about what I have experienced	O	O	O	O	O
I think I can learn something from the situation	O	O	O	O	O
I often think that what I have experienced is much worse than what others have experienced	O	O	O	O	O
I think that I have to accept the situation	O	O	O	O	O
I am preoccupied with what I think and feel about what I have experienced	O	O	O	O	O
I think that I can become a stronger person as a result of what has happened	O	O	O	O	O
I keep thinking about how terrible it is what I have experienced	O	O	O	O	O

I think that I cannot change anything about it	O	O	O	O	O
I want to understand why I feel the way I do about what I have experienced	O	O	O	O	O
I think that the situation also has its positive sides	O	O	O	O	O
I often think that what I have experienced is the worst that can happen to a person	O	O	O	O	O
I think that I must learn to live with it	O	O	O	O	O
I dwell upon the feelings the situation has evoked in me	O	O	O	O	O
I look for the positive sides to the matter	O	O	O	O	O
I continually think how horrible the situation has been	O	O	O	O	O

Appendix E

Interpersonal Emotion Regulation Questionnaire (IERQ)

Below is a list of statements that describe how people use others to regulate their emotions. Please read each statement and then circle the number next to it to indicate how much this is true for you by using a scale from 1 (not true for me at all) to 5 (extremely true for me). Please do this for each statement. There are no right or wrong answers.	
1----------2----------3----------4----------5 not true for me a little bit moderately quite a bit extremely true at all	
1.It makes me feel better to learn how others dealt with their emotions.	1—2—3—4—5
2. It helps me deal with my depressed mood when others point out that things aren't as bad as they seem.	1—2—3—4—5
3. I like being around others when I'm excited to share my joy.	1—2—3—4—5
4.I look for other people to offer me compassion when I'm upset.	1—2—3—4—5
5. Hearing another person's thoughts on how to handle things helps me when I am worried	1—2—3—4—5
6. Being in the presence of certain other people feels good when I'm elated.	1—2—3—4—5
7. Having people remind me that others are worse off helps me when I'm upset.	1—2—3—4—5
8. I like being in the presence of others when I feel positive because it magnifies the good feeling.	1—2—3—4—5
9. Feeling upset often causes me to seek out others who will express sympathy.	1—2—3—4—5
10. When I am upset, others make me feel better by making me realize that things could be a lot worse.	1—2—3—4—5
11. Seeing how others would handle the same situation helps me when I am frustrated.	1—2—3—4—5
12. I look to others for comfort when I feel upset.	1—2—3—4—5
13. Because happiness is contagious, I seek out other people when I'm happy.	1—2—3—4—5
14. When I am annoyed, others can soothe me by telling me not to worry.	1—2—3—4—5
15. When I'm sad, it helps me to hear how others have dealt with similar feelings.	1—2—3—4—5
16. I look to other people when I feel depressed just to know that I am loved.	1—2—3—4—5

17. Having people telling me not to worry can calm me down when I am anxious.	1—2—3—4—5
18. When I feel elated, I seek out other people to make them happy.	1—2—3—4—5
19. When I feel sad, I seek out others for consolation.	1—2—3—4—5
20. If I'm upset, I like knowing what other people would do if they were in my situation.	1—2—3—4—5

Appendix F

Difficulties in Emotion Regulation Scale (DERS)

Please indicate how often the following statements apply to you by recording the appropriate number from the scale below on the line beside each item.

1----------2----------3----------4----------5

almost never (0-10%)	sometimes (11-35%)	about half the time (36-65%)	most of the time (66-90%)	almost always (91-100%)

_____ 1) I am clear about my feelings.
_____ 2) I pay attention to how I feel.
_____ 3) I experience my emotions as overwhelming and out of control.
_____ 4) I have no idea how I am feeling.
_____ 5) I have difficulty making sense out of my feelings.
_____ 6) I am attentive to my feelings.
_____ 7) I know exactly how I am feeling.
_____ 8) I care about what I am feeling.
_____ 9) I am confused about how I feel.
_____ 10) When I'm upset, I acknowledge my emotions.
_____ 11) When I'm upset, I become angry with myself for feeling that way.
_____ 12) When I'm upset, I become embarrassed for feeling that way.
_____ 13) When I'm upset, I have difficulty getting work done.
_____ 14) When I'm upset, I become out of control.
_____ 15) When I'm upset, I believe that I will remain that way for a long time.
_____ 16) When I'm upset, I believe that I will end up feeling very depressed.
_____ 17) When I'm upset, I believe that my feelings are valid and important.
_____ 18) When I'm upset, I have difficulty focusing on other things.
_____ 19) When I'm upset, I feel out of control.
_____ 20) When I'm upset, I can still get things done.
_____ 21) When I'm upset, I feel ashamed at myself for feeling that way.
_____ 22) When I'm upset, I know that I can find a way to eventually feel better.
_____ 23) When I'm upset, I feel like I am weak.
_____ 24) When I'm upset, I feel like I can remain in control of my behaviours.
_____ 25) When I'm upset, I feel guilty for feeling that way.
_____ 26) When I'm upset, I have difficulty concentrating.
_____ 27) When I'm upset, I have difficulty controlling my behaviours.
_____ 28) When I'm upset, I believe there is nothing I can do to make myself feel better.
_____ 29) When I'm upset, I become irritated at myself for feeling that way.
_____ 30) When I'm upset, I start to feel very bad about myself.
_____ 31) When I'm upset, I believe that wallowing in it is all I can do.
_____ 32) When I'm upset, I lose control over my behaviour.

_____ 33) When I'm upset, I have difficulty thinking about anything else.
_____ 34) When I'm upset I take time to figure out what I'm really feeling.
_____ 35) When I'm upset, it takes me a long time to feel better.
_____ 36) When I'm upset, my emotions feel overwhelming.

Appendix G

Center for Epidemiologic Studies Depression Scale, Revised (CESD-R)

Below is a list of the ways you might have felt or behaved. Please indicate how often you have felt this way **during the past week**.

	Rarely or none of the time (less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of time (3-4 days)	Most of or all of the time (5-7 days)
1. I was bothered by things that usually don't bother me.	1	2	3	4
2. I did not feel like eating; my appetite was poor.	1	2	3	4
3. I felt like I could not shake off the blues even with help from my family or friends.	1	2	3	4
4. I felt I was just as good as other people.	1	2	3	4
5. I had trouble keeping my mind on what I was doing.	1	2	3	4
6.I felt depressed.	1	2	3	4
7. I felt that everything I did was an effort.	1	2	3	4
8. I felt hopeful about the future.	1	2	3	4
9. I thought my life had been a failure.	1	2	3	4
10. I felt fearful.	1	2	3	4
11. My sleep was restless.	1	2	3	4
12. I was happy.	1	2	3	4
13. I talked less than usual.	1	2	3	4
14. I felt lonely.	1	2	3	4

15. People were unfriendly.	1	2	3	4
16. I enjoyed life.	1	2	3	4
17. I had crying spells.	1	2	3	4
18. I felt sad.	1	2	3	4
19. I felt that people disliked me.	1	2	3	4
20. I could not get “going”.	1	2	3	4

Appendix H

Subjective Happiness Scale (SHS)

For each of the following statements and/or questions, please circle the point on the scale that you feel is most appropriate in describing you.

1. In general, I consider myself:

1	2	3	4	5	6	7
Not a very happy person						A very happy person

2. Compared to most of my peers, I consider myself:

1	2	3	4	5	6	7
Less Happy						More happy

3. Some people are generally very happy. They enjoy life regardless of what is going on, getting the most out of everything. To what extent does this characterization describe you?

1	2	3	4	5	6	7
Not at all						A great deal

4. Some people are generally not very happy. Although they are not depressed, they never seem as happy as they might be. To what extent does this characterization describe you?

1	2	3	4	5	6	7
Not at all						A great deal

Appendix I

Mental Health Continuum Short Form (MHC-SF)

Please answer the following questions are about how you have been feeling **during the past month**. Indicate how often you have experienced or felt the following:

During the past month, how often do you feel …	Never	Once or twice	About once a week	About 2 or 3 times a week	Almost every day	Every day
1. happy						
2. interested in life						
3. satisfied with life						
4. that you had something important to contribute to society						
5. that you belonged to a community (like a social group, or your neighbourhood)						
6. that our society is a good place, or is becoming a better place, for all people						
7. that people are basically good						
8. that the way our society works makes sense to you						
9. that you liked most parts of your personality						
10. good at managing the responsibilities of your daily life						
11. that you had warm and trusting relationships with others						
12. that you had experiences that challenged you to grow and become abetter person						
13. confident to think or express your own ideas and opinions						
14. that your life has a sense of direction or meaning to it						

Appendix J

Difficulties in Interpersonal Regulation of Emotion Scale (DIRE)

DIRE

A series of scenarios are presented below. First please tell us how you would respond to each scenario. Then, please indicate on a scale from 1(very unlikely) to 5 (very likely) the likelihood that you would respond in each of the ways listed. Please provide an answer to each response.

1) **You are feeling upset by a project you need to complete for school or work. The deadline is tomorrow and you're worried that there is no way that you will be able to get all the work finished.**

A. In this situation, you would feel:

0----------50----------100

Not at all distressed Extremely distressed

B. In order to feel better , how likely is it that you would:

a. Raise your voice or complain to the person in charge

1 2 3 4 5

very unlikely very likely

b. Distract yourself from how you are feeling

1 2 3 4 5

very unlikely very likely

c. Complain to your coworkers or classmates about how it is unfair the situation is

1 2 3 4 5

very unlikely very likely

2) **You and your significant other have been fighting a lot. You really care about the relationship want things to work out. You've just had another fight.**

A. In this situation, you would feel:

0----------50----------100

Not at all distressed — Extremely distressed

B. In order to feel better, how likely is it that you would:

a. Raise your voice or criticize your significant other to express how you feel

1 2 3 4 5

very unlikely — very likely

b. Distract yourself from how you are feeling

1 2 3 4 5

very unlikely — very likely

c. Complain to friends or acquaintances about your significant other

1 2 3 4 5

very unlikely — very likely

d. Simply notice your feelings

1 2 3 4 5

very unlikely — very likely

e. Avoid feeling or showing your distress

1 2 3 4 5

very unlikely — very likely

f. Keep contacting (texting, calling, etc.) friends and loved ones

1 2 3 4 5

very unlikely — very likely

g. Keep asking for reassurance

1 2 3 4 5

very unlikely — very likely

3) **You feel like your friends have been avoiding you. Every time you call one of them, they are busy. You want to have a social life and be liked. One day you hear that a bunch of your friends went out to dinner without you.**

A. In this situation, you would feel:

0----------50----------100

Not at all distressed Extremely distressed

B. In order to feel better, how likely is it that you would:

a. Raise your voice or criticize your friends to express how you feel

1 2 3 4 5

very unlikely very likely

b. Distract yourself from how you are feeling

1 2 3 4 5

very unlikely very likely

c. Complain to mutual acquaintances about your friends

1 2 3 4 5

very unlikely very likely

d. Simply notice your feelings

1 2 3 4 5

very unlikely very likely

e. Avoid feeling or showing your distress

1 2 3 4 5

very unlikely very likely

f. Keep contacting (texting, calling, etc.) friends and loved ones

1 2 3 4 5

very unlikely very likely

g. Keep asking for reassurance

1 2 3 4 5

very unlikely very likely

Appendix K

Non-URPP Recruitment Poster

Appendix L

Recruitment Email

Hi everyone,

I am currently recruiting undergraduate students to participate in an online survey on university students' emotions and well-being. The survey will take approximately 30 minutes and you will have the opportunity to participate in a prize draw for 1 in 5 $25 Tim Hortons' gift cards!

Here's the survey link: https://tinyurl.com/yb699uj7

If you have any questions, please feel free to contact me at sachan@yorku.ca

Best,

Samantha

Samantha Chan

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