EMOTION MINDSETS AND DEPRESSIVE SYMPTOMS IN ADOLESCENCE: THE ROLE
OF EMOTION REGULATION COMPETENCE

BY

HALEY SKYMBA

THESIS

Submitted in partial fulfillment of the requirements
for the degree of Master of Science in Psychology
in the Graduate College of the
University of Illinois at Urbana-Champaign, 2019

Urbana, Illinois

Advisers:

   Professor Karen Rudolph
   Professor Wendy Heller

ABSTRACT

Recent theories posit that emotion mindsets (i.e., the extent to which individuals believe emotions are malleable or fixed) play a crucial role in experiences of emotion and influence emotion regulation (ER) processes. Specifically, those with a fixed emotion mindset (FEM; beliefs that emotions are unchangeable) may find emotions to be challenging or overwhelming, making them more likely to show emotion dysregulation and less likely to engage in proactive ER strategies, which may heighten risk for depressive symptoms. This process is of specific interest in adolescence, a period when many first episodes of depression occur. Drawing from mindset theory, this study examined the hypothesis that FEMs would predict depressive symptoms via compromised ER competence. Results supported these hypotheses across two studies assessing participants in mid- and late adolescence. Specifically, using a comprehensive approach to assessing ER, results demonstrated that FEMs were associated with less engagement and more emotion dysregulation. In turn, higher engagement was associated with lower depressive symptoms whereas higher disengagement and emotion dysregulation were associated with higher depressive symptoms. An exploratory examination of gender differences showed that in late-, but not mid-adolescence, the strength of the connection between FEMs and ER differed between boys and girls. These findings highlight that one understudied pathway from FEMs to depressive symptoms may be the manner in which individuals respond to their emotions, implicating emotion mindsets as one target for efforts to improve clinical outcomes during adolescence.

TABLE OF CONTENTS

INTRODUCTION

The beliefs people hold about the malleability of attributes (i.e., mindsets) predict a variety of psychological characteristics and functional outcomes (Dweck, 1996). Of particular relevance to clinical symptoms and psychological health are mindsets about emotion. Although fixed emotion mindsets (i.e., the belief that emotions are not controllable) serve as a risk factor for impaired psychological health at various developmental stages (De Castella et al., 2014; Schroder, Dawood, Yalch, Donnellan, & Moser, 2015), the potential mechanisms accounting for this association have received relatively little empirical attention. One prominent theory suggests that emotion malleability beliefs play a critical role in whether, and how, individuals regulate their emotions (Kneeland, Dovidio, Joormann, & Clark, 2016; Tamir, John, Srivastava, & Gross, 2007). The present study examined whether emotion regulation (ER) competence accounts for the connection between fixed emotion mindsets (FEMs) and depressive symptoms. Taking a comprehensive approach to assessing ER competence, we proposed that FEMs would be associated with elevated depressive symptoms via more voluntary engagement and less emotion dysregulation. We examined this possibility during mid-adolescence (Study 1) and late-adolescence (Study 2), periods of development marked by heightened risk for depressive symptoms and thus of particular relevance for understanding the connection between emotion mindsets and psychological health.

CONCEPTUALIZATION OF EMOTION MINDSETS

Theory and research indicate that individuals vary in their beliefs about the fixed or malleable nature of a variety of attributes, ranging from intelligence (Blackwell, Trzesniewski, & Dweck, 2007; Romero, Master, Paunesku, Dweck, & Gross, 2014; Yeager & Dweck, 2012) and personality (Erdley, Loomis, Cain, Dumas-Hines, & Dweck, 1997; Plaks, Levy & Dweck, 2009;

Schleider & Weisz, 2016c; Yeager et al., 2011; Yeager & Miu, 2011; Yeager et al., 2014) to social traits (Dweck, 1999) and morality (Chiu, Dweck, Tong, & Fu, 1997). More precisely, a fixed mindset indicates the belief that specific attributes are unchangeable or uncontrollable (Dweck, 2006). Holding a fixed mindset is associated with detrimental outcomes, such as poor academic performance when examining beliefs about intelligence (Dweck & Leggett, 1988), and helpless behavior in the face of social adversity when examining beliefs about personality (Miu & Yeager, 2015). More recently, mindset theory has been applied to emotion (De Castella et al., 2013; De Castella, Platow, Tamir, & Gross, 2018; Smith et al., 2018; Tamir et al., 2007). Similar to the established domain specificity of mindsets for other attributes (e.g., beliefs about intelligence are independent of beliefs about morality; Chiu et al., 1997, Chiu, Hong, & Dweck, 1997), emotion mindsets and their associated outcomes are also domain-specific (Howell, 2017; Romero et al., 2014; Schroder et al., 2015; Schroder, Dawood, Yalch, Donnellan, & Moser, 2016; Schroder, Kneeland, Silverman, Beard, & Björgvinsson, 2019; Tamir et al., 2007). Thus, the relevance of fixed emotion mindsets (FEMs) to emotional processes and emotional health is of particular interest for emerging research.

EMOTION MINDSETS AND PSYCHOLOGICAL HEALTH

A small but growing body of work links FEMs to impaired psychological health across various developmental stages (De Castella et al., 2013; Kappes & Schikowski, 2013; King & dela Rosa, 2019; Schroder et al., 2015; Schroder et al., 2016, Tamir et al., 2007). FEMs are associated with elevated psychological distress and negative affect, lower self-esteem, and lower life satisfaction in community samples (De Castella et al., 2013; Kappes & Schikowski, 2013; King & dela Rosa, 2019), as well as higher levels of perceived stress and anxiety and lower levels of self-esteem in clinical samples (De Castella et al., 2014). In late adolescents, higher

levels of FEMs predicted fewer positive, and more negative, emotional experiences as well as increases in depressive symptoms after the first year of college (Tamir et al., 2007). Further, higher FEMs predicted elevated depressive symptoms during other stages of adolescence, both cross-sectionally (ages 14-18) and longitudinally, over the course of an 18-month period (ages 10-18; Ford, Lwi, Gentzler, Hankin, & Mauss, 2018).

EMOTION REGULATION COMPETENCE AS A PATHWAY LINKING EMOTIONG MINDSETS AND DEPRESSIVE SYMPTOMS

Despite growing support for the connection between FEMs and depressive symptoms, less is known about why fixed mindsets may heighten the risk for depression during adolescence. Drawing from theoretical perspectives suggesting that emotion mindsets may influence how individuals engage with emotions, which ultimately contributes to psychological health (Kneeland et al., 2016), the present study aimed to examine whether emotion regulation (ER) competence would help to account for the emotion mindset-depression association.

To provide a comprehensive assessment of ER that was relevant to the study aims, we drew from established frameworks of responses to stress and negative emotion. In particular, pioneering (Lazarus & Folkman, 1984) and contemporary (Compas, Connor, Osowiecki, & Welch, 1997; Gross, 2013) frameworks distinguish between two dimensions of responses to negative emotions: effortful (i.e., voluntary) versus automatic (i.e., involuntary), and engagement (i.e., approach) versus disengagement (i.e., avoidance). These orthogonal dimensions yield four types of ER responses: (1) voluntary engagement (purposeful efforts to modify and regulate responses to emotional challenges; e.g., cognitive reappraisal, problem solving, and acceptance); (2) voluntary disengagement (purposeful efforts directed away from negative emotions; e.g., denial, avoidance, and wishful thinking); (3) involuntary engagement (automatic responses

involving over-engagement with negative emotions; e.g., rumination, intrusive thoughts, and physiological arousal); and (4) involuntary disengagement (automatic responses involving under-engagement with negative emotion; e.g., inaction, cognitive interference, and emotional numbing).

Mindsets are assumed to be most relevant to effort and self-regulation during challenging conditions (Blackwell et al., 2007; Dweck, 1996; Dweck 2006). Thus, when faced with the challenge of negative affect, beliefs about emotion are likely to guide how individuals manage their emotions. FEMs may lead individuals to be overwhelmed by negative emotions, resulting in more emotion dysregulation (reflected in involuntary engagement and disengagement responses). Additionally, those with a higher FEM may feel powerless to change their current affective state, thereby increasing their likelihood of showing more voluntary disengagement responses (e.g., avoidance), as well as fewer voluntary engagement efforts (e.g., cognitive reappraisal; Gross, 2008; Kneeland et al., 2016; Tamir et al., 2007). A small body of research in adolescents and adults supports these ideas, demonstrating that those with FEMs are less likely to engage in cognitive reappraisal (De Castella et al., 2013; Ford et al., 2018; Schroder et al., 2015; Tamir et al., 2007) and more likely to engage in cognitive and behavioral avoidance (De Castella et al., 2018).

Conceptual models of depression view impaired ER as a path through which core features of the disorder (e.g., sustained negative affect and reduced positive affect) occur (Joormann & Vanderlind, 2014). Supporting evidence reveals that lower levels of adaptive ER strategies, such as voluntary engagement efforts (e.g., cognitive reappraisal), and higher levels of maladaptive ER responses, such as involuntary engagement (e.g., rumination) and disengagement (e.g., emotional numbing), predict depressive symptoms over time (Chaplin &

4

Cole, 2005; Troop-Gordon, Rudolph, Sugimura, & Little, 2015; Werner & Gross, 2010). Given that (a) emotion mindsets may contribute to ER competence, and (b) compromised ER is viewed as a pathway to depression (Chaplin & Cole, 2005; Garnefski & Kraaij, 2006b; Gross & John, 2003; Joormann & Vanderlind, 2014; Nolen-Hoeksema, 2000), we hypothesized that FEMs would be associated with depressive symptoms via ER difficulties (Kneeland et al., 2016). To our knowledge, only three studies to date (De Castella et al., 2013; Ford et al., 2018; King & dela Rosa, 2019) have examined this mediation model empirically, and they were constrained by a narrow focus on cognitive reappraisal strategies. We aimed to expand existing work by operationalizing ER more comprehensively, as described earlier, and including a more comprehensive assessment of emotion mindsets, to determine whether FEMs are linked to depressive symptoms via both lower levels of adaptive (voluntary engagement) ER strategies and higher levels of maladaptive ER (voluntary disengagement, involuntary engagement, and involuntary disengagement).

STUDY OVERVIEW

The present research examined a conceptual model hypothesizing that the association between FEMs and elevated depressive symptoms would be accounted for by less voluntary engagement and more emotion dysregulation. We examined this model during adolescence, a stage when youth show elevated rates of depression (Hankin et al., 1998; Hankin et al., 2015; Rudolph, 2009). A handful of studies demonstrate a connection between FEMs and worse psychological health during this developmental period (Ford et al., 2018; King & dela Rosa, 2019; Romero et al., 2014; Schleider & Weisz, 2016b; Tamir et al., 2007). However, research examining the potential role of ER in this association is quite sparse. To address this gap and to provide a more complete developmental picture of the connection between FEMs, ER, and

depressive symptoms in youth, we tested our conceptual model across two studies – one study of late-adolescents (N=422) utilizing structural equation modeling (i.e., examining ER and emotion dysregulation as latent variables) and another study of mid-adolescents (N=110) utilizing path analyses (i.e., examining ER responses as observed variables).

Extending prior research, we also explored potential gender differences in the hypothesized conceptual model. It is possible that when boys or girls have fixed mindsets, they fall back on stereotypical ER tendencies that are in line with gender role theories (Tamres, Janicki, & Helgeson, 2002). Specifically, in the context of FEMs, which may instill less flexibility in ER, adolescents may respond to negative affect in ways that are stereotypical of their gender. Gender-emotion stereotypes, which are learned and emphasized through external sources such as parent socialization and the media (Shields, 2013; Saarni et al., 2016), suggest that girls are more likely to show involuntary emotion dysregulation, such as rumination, whereas boys are more likely to show voluntary disengagement, such as avoidance (Tamres et al., 2002). Some research supports these gender-emotion stereotypes in both girls (Pascual, Conejero, & Etxebarria, 2016; Silk, Steinberg, & Morris, 2003) and boys (Blanchard-Fields & Coats, 2008; Vierhaus, Lohaus, & Ball, 2007). However, other studies have found that boys and girls show similar rates of voluntary engagement (Ford et al., 2018), and disengagement (Silk, Steinberg, & Morris, 2003) or that girls not only engage in a wider variety of ER strategies, but do so to a greater extent than boys (Tamres et al., 2002; Zimmerman & Iwanski, 2014). When viewed more comprehensively, the empirical evidence of gender differences in ER is largely mixed (Nolen-Hoeksema & Aldao, 2011). Taken together, the current literature highlights an understudied question of whether emotion mindsets might be differentially associated with emotion regulation competence and consequently, depressive symptoms, among boys and girls.

STUDY 1 METHODS

PARTICIPANTS AND PROCEDURES

Participants included 422 undergraduate students aged 18-21 (94% 18-19 years, $M =$ 18.52, $SD = .64$) at a Midwestern university (316 female, 106 male; 46.9% White, 29.6% Asian, 14.5% Latinx, 6.4% African American, and 2.6% Other/Multiracial). Participants were recruited through psychology courses and given course credit for their participation. In small groups, participants were given an overview of the study and completed consent forms. Participants were then assigned to individual testing rooms and given a link to an online survey that contained all measures for the study. All study procedures were approved by the university's Institutional Review Board.

MEASURES

Table 1 shows descriptive data and reliability of the measures. All measures showed acceptable to strong internal consistency.

Emotion Mindset Scale

To assess emotion mindsets, participants completed a novel 8-item emotion mindset measure that included two FEM items from the Implicit Theories of Emotion Scale (Tamir, et al., 2007; e.g., "No matter how hard they try, people can't really change the emotions that they have"), two FEM items from the Emotion Mindset Scale (EMS; Livingstone, 2012; e.g., "Emotions just happen to people, and there is nothing they can do about them"), and four new FEM items (e.g., "How emotional teens are is something very basic about them that really can't be changed"). As applicable, items from the established measures were modified to replace the word "people" with "teens," and only referred to "emotions" in general rather than to emotions with specific valences. Items were rated using a 5-point Likert scale (1 = Disagree Strongly to 5

= Agree Strongly). An average of all items was taken, with higher scores representing a higher FEM. Both the Implicit Theories of Emotion Scale and EMS have adequate psychometric properties, including high internal consistency, test-retest reliability, and discriminant validity (Livingstone, 2012; Tamir et al., 2007).

Emotion Regulation Questionnaire for Children and Adolescents (ERQ-CA)-Cognitive Reappraisal

To assess cognitive reappraisal, participants completed the ERQ-CA. This 10-item measure is an adaptation of the well-validated ERQ originally developed by Gross and John (2003). Cognitive reappraisal captures strategies in which an individual redefines a situation that brought about emotions in order to change its emotional impact (6 items; e.g., "I control my feelings about things by changing the way I think about them"). Items were rated using a 5-point Likert scale (1= Strongly Disagree to 5 = Strongly Agree). Responses were averaged together with higher scores representing greater use of this ER strategy. This measure has sound internal consistency as well as construct and convergent validity (Gullone & Taffe, 2011).

Responses to Stress Questionnaire (RSQ)

To assess responses to stress in the face of difficulties with peers, participants completed an adapted 41-item version (Rudolph, Abaied, Flynn, Sugimura, & Agoston, 2011) of the RSQ (Connor-Smith, Compas, Wadsworth, Thomsen, & Saltzman, 2000). Participants first rated on a 4-point Likert scale (1 = Not at all to 4 = Very Much) how stressful each of 12 peer stressors (e.g., "having a friendship end") had been for them over the past three months. They then rated how much they engaged in each of 41 responses to the stressors, which were combined into four subscales: (1) voluntary engagement, which assesses strategies such as problem solving (e.g., "I try to think of different ways to change the problem or fix the situation") and cognitive

restructuring (e.g., "I tell myself that things could be worse"); (2) voluntary disengagement, which assesses strategies such as denial (e.g., "I try to believe it never happened") and avoidance (e.g., "I try not to think about it, to forget about it all"); (3) involuntary engagement, which assesses responses such as rumination (e.g., "I keep thinking about what I said or did") and emotional arousal (e.g., "Right away I feel angry, sad, scared or worried"); and (4) involuntary disengagement, which assesses tendencies such as emotional numbing (e.g., "I really don't know what I feel"), and inaction (e.g., "I end up just lying around or sleeping a lot"). All items on the RSQ were rated using a 4-point Likert scale (1 = Not at All to 4 = Very Much). Scores were computed as the mean of each subscale (see Table 1), with higher scores representing greater use of each type of response. Validity of the original (Connor-Smith et al., 2000) and revised (Rudolph et al., 2011; Troop-Gordon et al., 2015) versions have been well-established.

Rumination Response Scale (RRS)

To assess ruminative responses to stress, participants completed the brooding subscale of the RRS (Treynor, Gonzalez, & Nolen-Hoeksema, 2003), a facet of rumination that involves consistent negative thinking or "moody pondering" in the face of stress (Treynor et al., 2003; 5 items; e.g., "I think about a recent situation, wishing it had gone better"). Items were rated using a 4-point Likert scale (1 = Almost Never to 4 = Almost Always) regarding how often participants engage in such thoughts when they feel stressed. Responses were averaged together, with higher scores representing higher levels of rumination. The RRS has good internal consistency and moderate test-retest stability in undergraduate samples (Roelofs, Muris, Huibers, Peeters, & Arntz, 2006).

Difficulties in Emotion Regulation Scale (DERS-16)

To assess difficulties in ER in the context of negative affect, participants completed three subscales (goals, impulse, and strategies) of the DERS-16 (Bjureberg et al., 2016). The goals subscale captures difficulty concentrating or completing tasks when upset (3 items; "I have difficulty getting work done"). The impulse subscale captures difficulties controlling behavior when upset (3 items; "I feel out of control"). The strategies subscale captures the belief that little to nothing can be done to deal with emotions when upset (5 items; "I believe that there is nothing I can do to make myself feel better"). Items were rated using a 5-point Likert scale (1=Almost Never to 5=Almost Always). Responses for all items were averaged together, with higher scores representing greater ER difficulties. This measure has excellent internal consistency as well as good convergent and discriminant validity (Bjureberg et al., 2016).

Short Mood and Feelings Questionnaire (SMFQ)

To assess depressive symptoms, participants completed the SMFQ. This 13-item measure captures depressive symptoms over the previous two weeks (Angold, Costello, Messer, & Pickles, 1995). Items were rated using a 4-point Likert scale (1 = Not at All to 4 = Very Much). Scores were computed as the mean of the items, with higher scores representing more depressive symptoms. The SMFQ has high internal consistency and shows strong correlations with the Children's Depression Inventory (CDI) and Diagnostic Interview Schedule for Children (DISC) depression scale (Angold et al., 1995). It also differentiates depression from other diagnoses (Thapar & McGuffin, 1998).

STUDY 1 RESULTS

CORRELATION ANALYSES AND CREATION OF LATENT VARIABLES

Table 1 displays the intercorrelations among the measure subscales. As shown in the table, ERQ-CA cognitive reappraisal and RSQ voluntary engagement were significantly and positively correlated with one another and were weakly and/or negatively correlated with all other ER subscales. The remaining RSQ subscales as well as the DERS and RRS were all significantly positively correlated with one another, supporting theory and research distinguishing voluntary engagement as distinct from voluntary disengagement and emotion dysregulation (i.e., involuntary engagement, involuntary disengagement). Based on these results, we created two latent constructs for subsequent analyses: (1) engagement, which included ERQ-CA cognitive reappraisal and RSQ voluntary engagement as indicators; and (2) emotion dysregulation, which included the remaining subscales (RSQ voluntary disengagement, involuntary engagement, and involuntary disengagement and RRS as well as DERS subscales) as indicators[1].

EXAMINATION OF THE HYPOTHESIZED MODEL

We conducted structural equation modeling (SEM) with Mplus Version 8 (Muthén & Muthén, 2017) to examine our hypothesis that emotion mindsets would indirectly predict depressive symptoms through engagement and emotion dysregulation (Figure 1). Engagement and emotion dysregulation were represented by latent variables, whereas FEMs and depressive symptoms were represented by observed variables. Paths were included from FEMs to engagement and emotion dysregulation, engagement and emotion dysregulation to depressive symptoms, and FEMs to depressive symptoms (see Figure 1). We tested for indirect effects using

---

[1] Supplemental Table 1 provides the intercorrelations for all of the specific indicators of the latent variables

bootstrap estimates with 10,000 draws. Data were missing for two of the ER variables, with <1% incomplete for each variable. According to Schafer (1997), less than 5% of missing data has an ignorable impact on statistical results. Missing data were estimated using Full Information Maximum Likelihood (FIML; Enders & Bandalos, 2001).

We evaluated model-data fit using standard indices (Hu & Bentler, 1999), including RMSEA and CFI. Modification indices suggested additional covariances between indicators of voluntary disengagement and involuntary disengagement. To account for these covariances and improve model fit, we created a partial bifactor model in which certain subscales loaded on both the main emotion dysregulation latent variable as well as on additional voluntary and involuntary disengagement latent variables[2]. Guided by modification indices, we also made several additional modifications to improve model fit (see Figure 1).

Multi-group comparison analyses were conducted to examine whether the model varied across gender. Specifically, a model was estimated in which all factor loadings, latent intercepts, latent variances, and structural paths were free to vary across girls and boys. For model convergence, all indicator intercepts were constrained to be equal for girls and boys. The fully unconstrained model provided significantly better fit than the fully constrained model, [$\Delta\chi^2(39) = 100.91, p < .001$]. To identify the specific paths that differed by gender, we sequentially unconstrained each individual structural path. These analyses revealed significant gender differences in the loadings for two of the indicators of emotion dysregulation, one indicator of

---

[2]The latent variables of voluntary disengagement and involuntary disengagement differed slightly from Compas' original conceptualization in the following ways: (1) escape loaded on voluntary disengagement instead of involuntary disengagement; (2) wishful thinking was not included in the voluntary disengagement factor because it did not load on this latent variable.

voluntary disengagement, and five indicators of engagement. There was also a significant gender difference in the covariance between emotional dysregulation and engagement and in five of the error covariances. However, the structural paths did not significantly differ by gender, and the overall pattern of results was the same for girls and boys. Thus, we collapsed across gender for the primary analysis.

The collapsed model provided a good fit to the data, $\chi^2(234) = 563.940$, $p < .001$, $\chi^2/df = 2.41$, $p < .001$, CFI = .92, RMSEA = .05. Figure 1 displays standardized loadings and path coefficients. As anticipated, the paths between FEMs and engagement, and between engagement and depressive symptoms were negative and significant, whereas the paths between FEMs and emotion dysregulation, and between emotion dysregulation and depressive symptoms were positive and significant. Several indexes supported mediation. First, the direct path from FEMs to depressive symptoms was reduced to nonsignificance after including engagement and emotion dysregulation in the model ($b = .032$, 95% CI = [-.043-.110]). Additionally, the indirect effect of FEMs on depressive symptoms was significant through engagement ($b = .010$, 95% CI [.001-.029]) and emotion dysregulation ($b = .199$, 95% CI [.139-.267]). The total indirect effect of FEMs on depressive symptoms was significant ($b = .209$, 95% CI [.150-.276]). Third, the strength of mediation was quantified by calculating the effect proportion (indirect effect/total effect; Shrout & Bolger, 2002), which indicated that 86.7% of the total effect of FEMs on depressive symptoms was accounted for by the engagement and emotion dysregulation latent variables. Finally, the model accounted for 49.6% of the variance in depressive symptoms.

STUDY 2 METHODS

PARTICIPANTS AND PROCEDURE

Participants included 110 adolescents aged 14-18 ($M = 16.17$, $SD = 1.16$) recruited from a public high school in central Illinois (58 female, 52 male; 90% White, .9% African American, 1.8% Latinx, and 7.3% Other/Multiracial). One participant was excluded from analyses because they indicated gender as non-binary, and the present study included an analysis of gender differences. Recruitment occurred through electronic administration of consent forms sent from the participants' high school. During a study hall period, participants were provided an overview of the study and completed individual assent forms in a group setting. Participants completed all written measures for the study individually and were entered into a drawing to win a gift card for their participation. All procedures were approved by the university's Institutional Review Board.

MEASURES

Table 2 presents descriptive data and reliability of the measures. All measures showed strong internal consistency.

Emotion Mindset Scale

To assess emotion mindsets, participants completed a novel 14-item emotion mindset measure that included the same 8 items used in Study 1 plus two additional items from the Implicit Theories of Emotion Scale (Tamir et al., 2007) and four additional items from the Emotion Mindset Scale (EMS; Livingstone, 2012). As applicable, items from the established measures were modified to replace the word "people" with "teens" and only referred to "emotions" in general rather than to emotions with specific valences. Items were rated using a 10-point Likert scale (1 = Disagree Strongly to 10 = Agree Strongly). An average of all items was taken, with higher scores representing a higher fixed emotion mindset.

Responses to Stress Questionnaire (RSQ)

The present study used the same 41-item version of the RSQ that was used in Study 1.

Youth Emotion Regulation and Dysregulation Scale (YERD)

To assess adolescents' responses to negative emotion, we developed a measure that included novel items as well as items drawn or adapted from well-validated measures (i.e., DERS, Bjureberg et al., 2016; RSQ, Connor-Smith et al., 2000; Cognitive Emotion Regulation Questionnaire; CERQ, Garnefski & Kraaij, 2006a; ERQ, Gross & John, 2003) The present study included eight subscales, which consisted of 8 novel items and 24 items from the aforementioned measures. Participants rated on a 5-point Likert scale (1=Not at All to 5=Very Much) how much they engaged in each response when upset: cognitive reappraisal (4 items; "I control my feelings by changing the way I think about things"), positive refocusing (4 items; "I try to think about pleasant things"), cognitive avoidance (4 items; "I avoid thinking about how I feel"), helplessness (4 items; "I feel there is nothing I can do to stop feeling upset"), rumination (4 items; "I keep thinking about how upset I feel"), cognitive interference (4 items; "I have trouble focusing on other things"), behavioral impulsivity (4 items; "I lose control over my behavior"), and emotional arousal (4 items; "I experience my emotions as overwhelming and out of control"). Responses for each subscale were averaged, with higher scores representing greater use of the respective response. Providing evidence of validity, YERD subscales were associated in the expected directions with comparable subscales on the well-established RSQ (Connor-Smith et al., 2000)[3].

---

[3]Given the overlap in items on the YERD and RSQ, we examined any differences in results when we removed the 6 items from the YERD that overlapped with the RSQ. All analyses were highly similar with five exceptions. (1-2) The correlation between the following subscales became significant (*p*s <.05): YERD behavioral impulsivity and YERD positive refocusing; YERD rumination and RSQ voluntary engagement; (3) The correlation between YERD positive refocusing and SMFQ changed in significance value (*p* < .01); and (4-5) The following correlations became nonsignificant (*p*s > .05): YERD cognitive interference and RSQ voluntary engagement; YERD behavioral impulsivity and EMS.

Short Mood and Feelings Questionnaire (SMFQ)

The present study used the same 13-item measure that was used in Study 1.

CORRELATION ANALYSES AND CREATION OF CONCEPTUAL COMPOSITES

Given the moderate sample size, we used theory and observed correlations, as well as the results from Study 1, to create conceptual composites of ER and emotion dysregulation. As shown in Table 2, corresponding subscales between the YERD and RSQ showed significant positive correlations (e.g., YERD cognitive reappraisal and RSQ voluntary engagement; YERD cognitive avoidance and RSQ voluntary disengagement), supporting existing theory and previous empirical research regarding distinct types of ER and emotion dysregulation (Gross, 2008). Drawing from Compas' (Compas et al.,1997) multidimensional framework of responses to stress, the results of Study 1 (which supported an emotion dysregulation latent factor as well as disengagement latent factors), and the observed correlations among subscales, we created three conceptual composites: engagement, disengagement, and emotion dysregulation. Although the emotion dysregulation latent factor in Study 1 included involuntary engagement as well as voluntary and involuntary disengagement responses, a partial bifactor model (which included correlated voluntary and involuntary disengagement latent variables) resulted in a better model fit. Thus, we created a separate disengagement composite in the current study to determine whether disengagement on its own would act as a mediator between FEMs and depressive symptoms. Each composite was created by taking the average of the associated standardized subscales.

The *engagement* composite included strategies oriented toward voluntary engagement with negative emotions and stressors (i.e., YERD cognitive reappraisal and positive refocusing and RSQ voluntary engagement). The *disengagement* composite included voluntary disengagement strategies and involuntary disengagement responses to negative emotion (i.e.,

YERD cognitive avoidance and RSQ voluntary and involuntary disengagement). The *emotion*

dysregulation composite included responses to negative emotion typically viewed as automatic

and maladaptive (i.e., RSQ involuntary engagement and YERD helplessness, rumination,

cognitive interference, behavioral impulsivity, and emotional arousal).

EXAMINATION OF THE HYPOTHESIZED MODEL

We conducted path analysis in MPlus Version 8 (Muthén & Muthén, 2017) to examine

our hypothesis that emotion mindsets would indirectly predict depressive symptoms through the

three distinct ER composites defined above. Paths were included from FEMs to each composite

(i.e., engagement, disengagement, and emotion dysregulation), each composite to depressive

symptoms, and FEMs to depressive symptoms (see Figure 2). Data were incomplete for two of

the variables, with 1% incomplete for each variable. According to Schafer (1997), fewer than 5%

of missing data have an ignorable impact on statistical results. Missing data were estimated using

Full Information Maximum Likelihood (FIML; Enders & Bandalos, 2001).

Multi-group comparison analyses were conducted to examine whether the model varied

across gender. Specifically, we compared a fully constrained model (all structural paths were

constrained to be equal across gender) with an unconstrained model (all structural paths were

allowed to vary across gender). This analysis revealed that the unconstrained model provided a

marginally significantly better fit than the fully constrained model [$\Delta\chi^2$ (1) = 24.18, p = .06]. To

verify that none of the specific paths differed by gender, we also sequentially unconstrained each

individual structural path. Although the pattern of significant paths was the same in girls and

boys, the path between FEMs and disengagement was significantly stronger for boys than for

girls, [$\Delta\chi^2$ (1) = 4.08, p = .04], whereas the path between FEMs and emotion dysregulation was

significantly stronger for girls than for boys, [$\Delta\chi^2$ (1) = 14.62, p < .001]. Given that the pattern of

18

significance (i.e., which paths were significant and nonsignificant) was the same between boys and girls, we collapsed across gender for the primary analysis. However, we also note the indirect effects for boys and girls separately, where relevant.

Given that the model was fully saturated, fit indices are not reported. Figure 2 displays standardized loadings and path coefficients. As anticipated FEMs were significantly associated with higher levels of engagement and lower levels of disengagement and emotion dysregulation. Both disengagement and emotion dysregulation were associated with higher levels of depressive symptoms. In addition, there were significant indirect effects of FEMs on depressive symptoms via disengagement (b = .055, 95% CI [.018-.116])[4] and emotion dysregulation (b = .099, 95% CI [.047-.175])[5]. However, the indirect effect of FEMs on depressive symptoms via engagement was not significant (b = .006, 95% CI [-.005-.029]). The total indirect effect of FEM on depressive symptoms was significant (b = .160, 95% CI [.095-.247]). Several additional indexes supported mediation. First, the direct path from FEMs to depressive symptoms was reduced to nonsignificance after including engagement, disengagement, and emotion dysregulation in the model (b = .093, 95% CI [-.002-.178]. To calculate the strength of mediation, we calculated the effect proportion (i.e., total indirect effect/total effect; Shrout & Bolger, 2002). This analysis indicated that 63.2% of the total effect of FEMs on depressive symptoms was accounted for by engagement, disengagement, and emotion dysregulation. Finally, the model accounted for 61.9% of the variance in depressive symptoms.

---

[4]This indirect effect was significant in both boys and girls.
[5]This indirect effect was significant in girls, but not boys.

DISCUSSION

The growing evidence for an association between emotion mindsets and depressive symptoms raises questions regarding the potential mechanisms that explain their connection. Drawing from prominent theoretical frameworks suggesting that emotion mindsets influence emotion processing (Kneeland et al., 2016; Tamir et al., 2007), the present study examined whether emotion regulation (ER) competence accounts for the association between fixed emotion mindsets (FEMs) and depressive symptoms in mid and late adolescence, periods marked by heightened risk for depression. Using a comprehensive approach to conceptualizing and assessing ER, we examined whether FEMs would contribute to depressive symptoms via compromised ER competence (i.e., reduced voluntary engagement and greater disengagement and emotion dysregulation). Results supported these hypotheses across two studies, one focused on mid-adolescence and one focused on late adolescence. In addition, an examination of gender differences in mid-adolescence provided novel evidence that the strength of the connection between FEMs and specific aspects of ER competence may differ between boys and girls.

FIXED EMOTION MINDSETS, EMOTION REGULATION COMPETENCE, AND DEPRESSIVE SYMPTOMS

Given that mindsets are especially relevant under challenging conditions (Dweck, 1996, Blackwell et al., 2007; Dweck 2006), emotion mindsets are likely to directly influence how individuals manage their affective state in the face of stressors or negative emotions. A prominent theoretical perspective regarding the connection between FEMs and depressive symptoms proposes that emotion mindsets influence the ways in which individuals regulate emotions (Kneeland et al., 2016). The present study supported this idea by demonstrating that FEMs are associated with less engagement (both studies) as well as more disengagement (Study

2) and emotion dysregulation (both studies). Moreover, engagement was associated with lower depressive symptoms, whereas disengagement and emotion dysregulation were associated with higher depressive symptoms. Further, in late adolescence, FEMs indirectly predicted depressive symptoms through lower engagement and higher emotion dysregulation; in mid adolescence, FEMs indirectly predicted depressive symptoms through higher disengagement and emotion dysregulation.

Taken together, these results suggest that additional dimensions of ER competence beyond cognitive reappraisal (i.e., those that involve voluntary and involuntary disengagement as well as involuntary engagement) are not only positively associated with FEMs and depressive symptoms, but are potential mechanisms for this association. Specifically, in late adolescence (Study 1), results revealed an indirect effect of FEMs on depressive symptoms via emotion dysregulation when it encompassed voluntary disengagement, involuntary engagement, and involuntary disengagement. In addition, when disengagement responses were distinguished from emotion dysregulation in mid-adolescence (Study 2), both the resulting disengagement composite and emotion dysregulation composite served as unique mediators of the association between FEMs and depressive symptoms. These findings highlight that one understudied pathway from FEMs to depressive symptoms may be the maladaptive manner in which individuals respond to their emotions.

Our finding of an indirect effect via engagement is consistent with previous research investigating a similar conceptual model during mid- to late adolescence (De Castella et al., 2013), as well as during earlier stages of adolescence (Ford et al., 2018). However, previous research has focused solely on the mediational role of cognitive reappraisal strategies. The present findings provide novel insight by demonstrating that a significant indirect effect occurs

even when incorporating a wide range of engagement strategies beyond cognitive reappraisal (e.g., problem solving, acceptance, positive thinking, distraction, emotional expression) into the model. These findings are consistent with previous notions that beliefs about the controllability of emotions will guide whether individuals decide to engage in purposeful, approach-oriented ER efforts (Tamir & Mauss, 2011). Following such conceptions, believing that emotions are relatively uncontrollable should lead individuals to feel powerless in the context of negative emotions, making it less likely for them to attempt to regulate their emotional experiences.

Although most empirical investigations of our proposed model focus on engagement (i.e., cognitive reappraisal), a small number of studies examine the role of other dimensions of ER competence. Several studies suggest that expressive suppression, unlike cognitive reappraisal, does not have the same connection to FEMs (De Castella et al., 2013; Tamir et al., 2007) and does not help to explain the association between FEMs and depressive symptoms (Ford et al., 2018). Given that beliefs about emotion focus on emotional experiences, and expressive suppression only targets emotional behaviors, such findings are in line with previous speculation regarding the absence of an association between these constructs (Tamir et al., 2007). Beyond reappraisal and suppression, one previous study revealed that avoidance-based strategies explain the link between FEMs and clinical anxiety symptoms (De Castella et al., 2018). Similarly, we found that disengagement, even when broadly defined (i.e., incorporating both voluntary and involuntary disengagement responses) accounted for the association between FEMs and depressive symptoms.

The findings from the present study regarding the explanatory role of disengagement supports the idea that those with higher FEMs may perceive themselves as incapable of regulating their emotions because they feel helpless in managing them, or they are frightened or

worried by negative emotions. These concerns may incline individuals toward disengagement strategies, such as avoidance. It is also possible that individuals believe that limited alternative strategies are available to them or they do not possess sufficient self-efficacy for implementing such strategies. Further, our novel finding implicating emotion dysregulation as a significant mediator suggests that adolescents with higher FEMs may simply be overwhelmed by their emotions, provoking more involuntary engagement. These maladaptive patterns of ER are viewed as a core feature of depression through which depressive symptoms arise (Chaplin & Cole, 2005; Werner & Gross, 2010). Ultimately, the current study is in line with such a theoretical understanding of these associations and provides needed insight regarding additional dimensions of ER competence that are highly relevant to this model.

IMPLICATIONS AND FUTURE DIRECTIONS

Our model was driven by a strong theoretical rationale (Kneeland et al., 2016; Tamir et al., 2007) and empirical research supporting FEMs as a risk factor for compromised ER competence (De Castella et al., 2018; Ford et al., 2018; King & dela Rosa, 2019) as well as compromised ER competence as a risk factor for subsequent depression (Werner & Gross, 2010). However, the concurrent nature of the study constrains our ability to establish the directionality of the effects. Notably, when individuals are struggling with symptoms of depressions that are difficult to control, they might begin to interpret their emotions as difficult to change. Upon continual failure to improve such negative affective states, youth may develop the belief that their emotions are fixed or unchangeable. Given that one preliminary study supports this direction of the effect (Schleider & Weisz, 2016a), the possibility of a transactional model should also be considered and investigated. Thus, future work utilizing longitudinal designs is

needed to further investigate temporal precedence in order to draw more definitive conclusions about the directionality among FEMs, ER competence, and psychopathology.

Notably, we examined this model during two stages of adolescence and found relatively similar results across these studies. This finding is consistent with other research in adolescence suggesting that the association between FEMs and depressive symptoms is not moderated by age (Ford et al., 2018). It is possible that these associations remain stable, but individual differences in the model emerge across the lifespan. As part of an exploratory analysis, we found that in mid-adolescence, but not late adolescence, the strength of the connection between FEMs and specific dimensions of ER competence differed between boys and girls. Specifically, the association between FEMs and emotion dysregulation was stronger for girls than for boys, whereas the association between FEMs and disengagement was stronger for boys than for girls (see Supplemental Materials). Although these differences were not found in one previous investigation (Ford et al., 2018), that study examined only the mediational role of cognitive reappraisal and expressive suppression. Very few studies have examined gender as a potential moderator of the various associations in the model. Given this limited investigation and the fact that some work supports differences in ER that align with gender role theories (e.g., girls are more likely to engage in rumination whereas boys are more likely to disengage from emotions; Tamres, Janicki, & Helgeson, 2002), it is possible that in the context of fixed mindsets, boys or girls may lack the flexibility to engage in various ER strategies and instead fall back on strategies in line with gender-role theories that have been emphasized via socialization.

To date, most work investigating associations among FEMs, ER competence, and depressive symptoms focuses on adolescents and young adults (Ford et al., 2018; Tamir et al., 2007), and little is known about how these associations change from childhood through

adulthood. As such, an understanding of when and how FEMs originate, as well as the ways in which FEMs influence ER and other individual differences throughout development, is crucial for further understanding this model and potential points of prevention and intervention for depression. This is especially relevant given that ER is known to evolve and change across the lifespan (Yurgelun-Todd, 2007; Zimmerman & Iwanski, 2014).

Gender and age may not be the only moderators that are of importance to the conceptual model proposed in this study. Although emotion mindsets are thought to help shape how individuals voluntarily or involuntarily respond to affective states, other emotional characteristics are also relevant to ER, such as emotional clarity (i.e., the extent to which an individual understands their emotional experiences; Gohm & Clore, 2002) and mindfulness (i.e., the extent to which an individual observes and attends to current experiences such as thoughts and emotions; Brown & Ryan, 2003). In the context of FEMs, those with high emotional clarity or mindfulness may be less likely to disengage from emotions or to exhibit emotion dysregulation given their understanding and connection to their affective states. Alternatively, low emotional clarity or mindfulness in the context of FEMs may further incline individuals toward compromised ER competence given a greater disconnection from emotions. It is possible that the association between FEMs and ER are moderated by these other meta-emotion beliefs that are also relevant to how individuals respond to their emotions (Gasper & Clore, 2000; Gohm & Clore, 2002; Hill & Updegraff, 2012). Given that FEMs have mainly been connected to ER and psychopathology, an examination of other related constructs has the potential to provide exciting insights into their role in psychological health (see Boden & Thompson, 2015).

Although our model focused solely on depressive symptoms, impaired ER is known as a transdiagnostic risk factor for various forms of psychopathology (Aldao, Gee, De, & Seager,

2016; Kring & Sloan, 2009). Further, theoretical frameworks of various forms of internalizing psychopathology (e.g., Barlow, 2002) propose a lack of control over emotions as central to the development and maintenance of such disorders. Thus, with further support of the directionality of the effects in our proposed model, it would be expected that the pattern of compromised ER competence associated with FEMs is also associated with other types of internalizing symptoms, especially those seen in anxiety disorders (e.g., generalized anxiety disorder or social anxiety disorder; Kneeland et al., 2016). Indeed, some work to date has supported connections between FEMs, ER, and anxiety symptoms (Schroder et al., 2015). The potential connections between FEMs, ER, and symptoms of various disorders, as well as the moderators that impact their association, is a needed area of investigation for future work to determine which emotional processes incline youth toward or against psychopathology.

CONCLUSION

Overall, this research provides novel insight regarding the mechanisms that account for the connection between FEMs and depressive symptoms. By taking a comprehensive approach to conceptualizing and assessing ER competence in adolescence, this study expands previous research and supports existing theory by demonstrating that several types of ER help to account for the association between FEMs and depressive symptoms during adolescence. Understanding these mechanisms has significant implications for the development of prevention and intervention efforts. It is possible that if programs are designed to challenge FEMs by instilling a more flexible mindset in youth (e.g., Kneeland, Nolen-Hoeksema, Dovidio, & Gruber, 2016; Smith et al., 2018), a positive cascade may occur, reducing risks of ER difficulties and subsequent psychopathology. Taken together, this research has implications for the refinement

and advancement of both conceptual models of adolescent emotional development and efforts to

place youth on positive developmental trajectories.

TABLES AND FIGURES

Table 1

Study 1 Descriptive Information and Intercorrelations

Measure	α	M (SD)	1	2	3	4	5	6	7	8	9
1. EMS	.90	2.43 (.82)	--								
2. Reappraisal (ERQ-CA)	.73	3.48 (.73)	-.12*	--							
3. Voluntary Engagement (RSQ)	.83	2.60 (.52)	-.10*	.53**	--						
4. Voluntary Disengagement (RSQ)	.76	2.12 (.56)	.27**	-.01	.05	--					
5. Involuntary Engagement (RSQ)	.84	2.26 (.61)	.31**	-.13**	-.08	.64**	--				
6. Involuntary Disengagement (RSQ)	.80	1.93 (.60)	.30**	-.13**	-.15**	.69**	.71**	--			
7. RRS	.80	2.42 (.75)	.20**	-.02	.01	.55**	.60**	.56**	--		
8. DERS	.91	2.38 (.89)	.31**	-.19**	-.21**	.55**	.65**	.68**	.64**	--	
9. Depressive Symptoms	.93	1.86 (.72)	.28**	-.17**	-.22**	.47**	.52**	.56**	.55**	.69**	--

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

Note. EMS = Emotion Mindset Scale; Reappraisal = YERD Cognitive Reappraisal; Voluntary Engagement = RSQ Voluntary Engagement; Voluntary Disengagement = RSQ Voluntary Disengagement; Involuntary Engagement = RSQ Involuntary Engagement; Involuntary Disengagement = RSQ Involuntary Disengagement; RRS = Rumination Response Scale (Brooding Subscale); DERS = Difficulties in Emotion Regulation Scale (Impulse, Strategies, and Goals Subscales); Depressive Symptoms = Short Mood and Feelings Questionnaire.

Table 2

Study 2 Descriptive Information and Intercorrelations

Measure	α	M (SD)	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. EMS	.91	4.44 (1.51)	--													
2. Reappraisal (YERD)	.73	2.97 (0.90)	-.27*	--												
3. Positive Refocusing (YERD)	.88	2.98 (1.00)	-.07	.64**	--											
4. Cognitive Avoidance (YERD)	.70	3.03 (0.84)	.20*	.20*	.32*	--										
5. Helpless (YERD)	.80	2.20 (0.90)	.46**	-.33**	-.28**	.22	--									
6. Rumination (YERD)	.85	2.77 (0.99)	.33**	-.17	-.26**	-.01	.74*	--								
7. Cognitive Interference (YERD)	.78	2.70 (0.91)	.26**	-.21*	-.33**	.09	.58**	.65**	--							
8. Behavioral Impulsivity (YERD)	.82	2.16 (0.86)	.25**	-.14	-.18	.03	.52**	.50**	.48**	--						
9. Emotional Arousal (YERD)	.90	2.40 (1.10)	.45**	-.20*	-.25**	.01	.78**	.82**	.60**	.70**	--					
10. Voluntary Engagement (RSQ)	.88	2.39 (0.53)	-.22*	.62**	.58**	.13	-.29**	-.18	-.20*	-.17	-.26**	--				
11. Involuntary Engagement (RSQ)	.88	2.18 (0.71)	.44*	-.17	-.17	.12	.67**	.76**	.73**	.68**	.81**	-.15	--			
12. Voluntary Disengage (RSQ)	.82	2.09 (0.66)	.35*	-.01	.07	.45**	.50**	.45**	.42**	.41**	.47**	.00	.65**	--		
13. Involuntary Disengage (RSQ)	.84	2.07 (0.71)	.43*	-.27**	-.18	.27**	.66**	.65**	.68**	.50**	.70**	-.27**	.80**	.70**	--	
14. Depressive Symptoms	.94	1.88 (0.75)	.52*	-.21*	-.21*	.23*	.67**	.62**	.60**	.50**	.68**	-.25*	.74**	.55*	.67**	--

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

Note. EMS = Emotion Mindset Scale; Reappraisal = YERD Cognitive Reappraisal; Positive Refocusing = YERD Positive Refocusing; Cognitive Avoidance = YERD Cognitive Avoidance; Helpless = YERD Helplessness; Rumination = YERD Rumination; Cognitive Interference = YERD Cognitive Interference; Behavioral Impulsivity = YERD Behavioral Impulsivity; Emotional Arousal = YERD Emotional Arousal; Voluntary Engagement = RSQ Voluntary Engagement; Involuntary Engagement = RSQ Involuntary Engagement; Voluntary Disengage = RSQ Voluntary Disengagement; Involuntary Disengage = RSQ Involuntary Disengagement; Depressive Symptoms = Short Mood and Feelings Questionnaire.
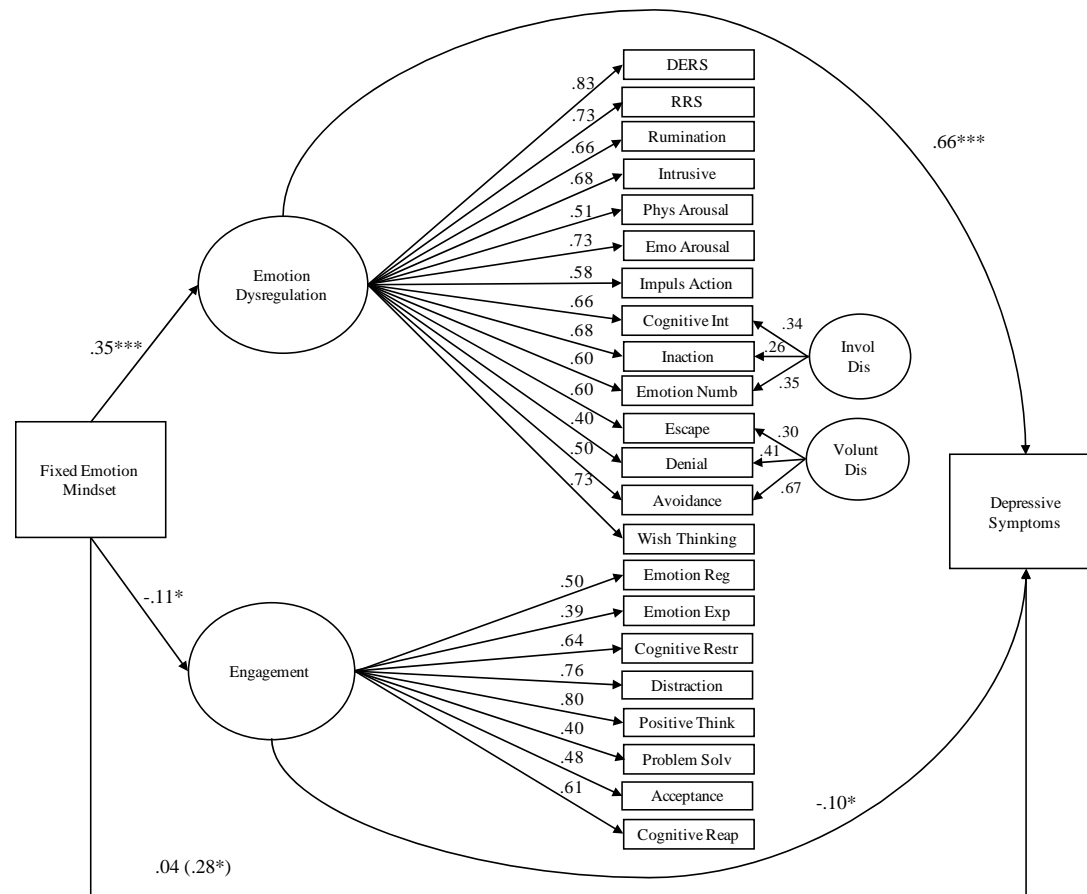
Figure 1. Structural equation modeling analysis displaying standardized coefficients from Study 1. Fixed Emotion Mindset = Emotion Mindset Scale; DERS = Difficulties in Emotion Regulation Scale; RRS = Rumination Response Scale (Brooding Subscale); Rumination = RSQ Rumination; Intrusive = RSQ Intrusive Thoughts; Phys Arous = RSQ Physiological Arousal; Emo Arous = RSQ Emotional Arousal; Impuls Action = Impulsive Action; Cognitive Int = RSQ Cognitive Interference; Inaction = RSQ Inaction; Emotion Numb = RSQ Emotional Numbing; Escape = RSQ Escape; Denial = RSQ Denial; Avoidance = RSQ Avoidance; Wish Thinking = RSQ Wishful Thinking; Emotion Reg = RSQ Emotion Regulation; Emotion Exp = RSQ Emotional Expression; Cog Restr = RSQ Cognitive Restructuring; Distraction = RSQ Distraction; Positive Think = RSQ Positive Thinking; Problem Solv = RSQ Problem Solving; Acceptance = RSQ Acceptance; Cognitive Reap = ERQ-CA Cognitive Reappraisal; Invol Dis = Involuntary Disengagement; Volunt Dis = Voluntary Disengagement; Depressive Symptoms = Short Mood and Feelings Questionnaire. Guided by modification indices, we allowed the residuals of the following indicators to covary: RSQ Emotion Regulation and RSQ Emotional Expression, RSQ Emotion Regulation and RSQ Problem Solving, RSQ Rumination and RSQ Intrusive Thoughts, DERS and RSQ Intrusive Thoughts, RSQ Physiological Arousal and RSQ Intrusive Thoughts, RSQ Denial and RSQ Impulsive Action. Finally, Involuntary Disengagement and Voluntary Disengagement as well as Engagement and Voluntary Disengagement were allowed to covary; *p* < .05. ***p* < .001. All factor loadings *p* < .001; Total effect included in parentheses.
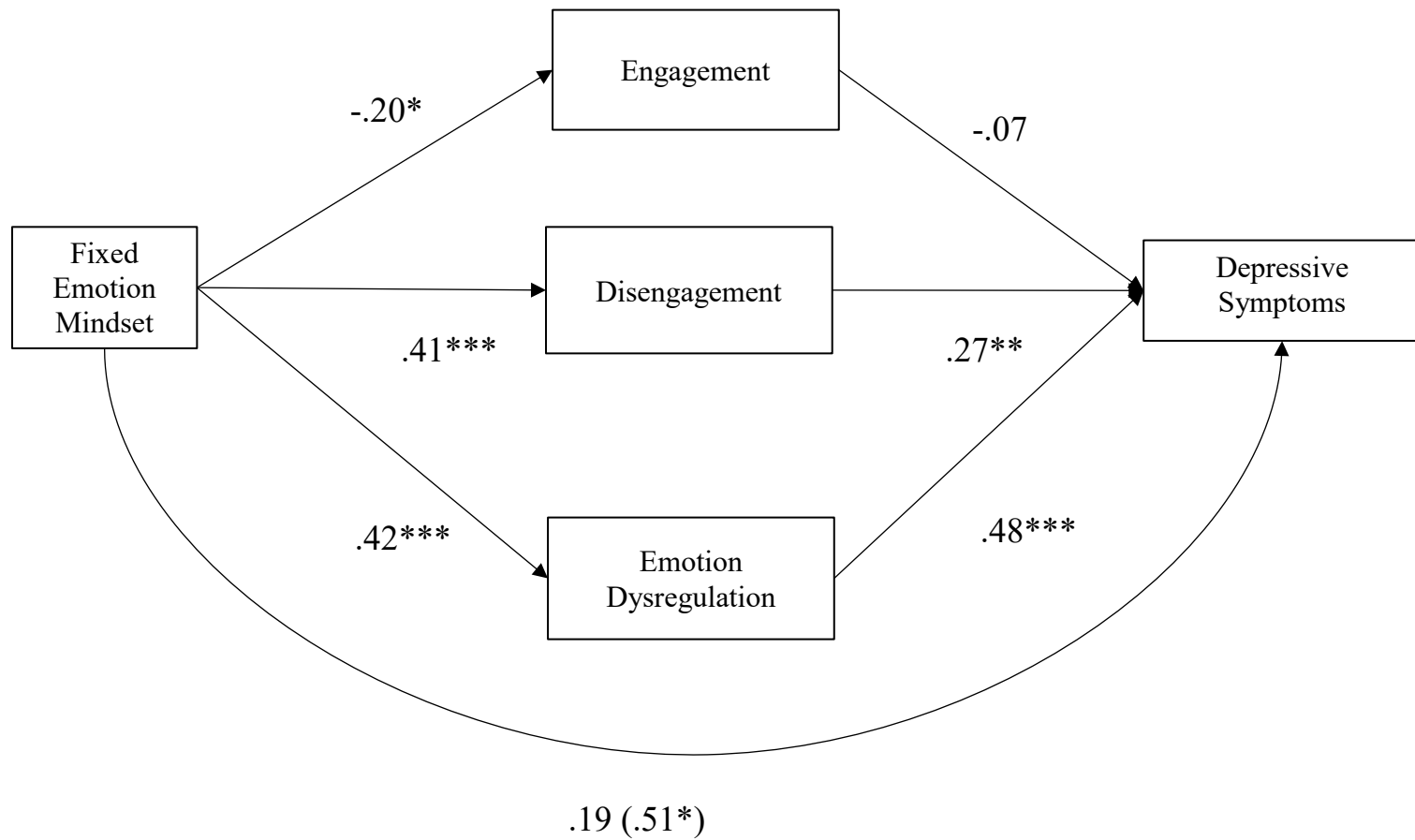
30

Figure 2. Path analyses displaying the mediation model and standardized coefficients among fixed emotion mindsets, emotion regulation composites, and depressive symptoms in Study 2. Total effect included in parentheses; *p < .05. **p < .01. ***p < .001.

Supplemental Table 1

Study 1 Intercorrelations

Measure	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1. EMS	--																							
2. Reappraisal (ERQ-CA)	-.12*	--																						
3. Problem Solving (RSQ)	-.10*	.30**	--																					
4. Acceptance (RSQ)	-.02	.32**	.18**	--																				
5. Positive Thinking (RSQ)	-.08	.45**	.30**	.40**	--																			
6. Distraction (RSQ)	-.05	.51**	.26**	.29**	.63**	--																		
7. Emotion Express (RSQ)	-.09	.22**	.28**	.10*	.28**	.35**	--																	
8. Emotion Regula (RSQ)	-.07	.30**	.41**	.20**	.40**	.38**	.63**	--																
9. Cognitive Restruc (RSQ)	-.06	.38**	.32**	.39**	.50**	.46**	.28**	.33**	--															
10. Wishful Think (RSQ)	.24**	-.08	-.07	.12*	-.09	-.03	.05	.07	-.08	--														
11. Avoidance (RSQ)	.20**	.04	-.03	.12*	.17**	.10*	-.01	.11*	.11*	.39**	--													
12. Denial (RSQ)	.18**	.05	-.10*	.08	.13**	.16*	-.07	-.03	.07	.33**	.48**	--												
13. Impulsiv Action (RSQ)	.23**	-.10*	-.08	.02	-.01	-.05	-.02	-.02	-.08	.37**	.33**	.43**	--											
14. Emotion Arousal (RSQ)	.24**	-.17**	-.04	-.14**	-.18**	-.17**	.03	.07	-.14**	.55**	.37**	.30**	.44**	--										
15. Physiol Arousal (RSQ)	.19**	-.12*	-.01	-.10*	-.05	-.02	.07	.04	-.05	.42**	.29**	.23**	.28**	.42**	--									
16. Intrusive (RSQ)	.25**	-.08	.05	-.15**	-.14**	.10*	.05	.07	-.07	.60**	.28**	.23**	.36**	.53**	.47**	--								
17. Rumination (RSQ)	.24**	-.01	.08	-.14**	-.12*	-.08	.12*	.15**	-.04	.59**	.28**	.17**	.34**	.55**	.37**	.70**	--							
18. Escape (RSQ)	.18**	-.03	-.08	-.06	-.05	-.02	.00	.04	-.07	.43**	.51**	.36**	.33**	.43**	.40**	.56**	.31**	--						
19. Emotion Numb (RSQ)	.25**	-.08	-.12*	-.06	-.05	-.05	-.08	-.03	-.08	.46**	.40**	.31**	.38**	.39**	.33**	.41**	.41**	.43**	--					
20. Inaction (RSQ)	.24**	-.16**	-.13*	-.10	-.18**	-.11*	-.16**	-.03	-.12*	.48**	.41**	.38**	.47**	.53**	.33**	.48**	.40**	.42**	.48**	--				
21. Cognitive Int (RSQ)	.22**	-.12*	-.07	-.08	-.14**	-.13**	-.10	-.03	-.05	.45**	.43**	.31**	.41**	.56**	.41**	.43**	.43**	.40**	.51*	.53**	--			
22. RRS	.20**	-.02	.01	-.05	-.05	-.02	.07	.03	.03	.57**	.38**	.29**	.43**	.37**	.48**	.46**	.49**	.43**	.37**	.48**	.43**	--		
23. DERS	.31**	-.19**	-.10*	-.20**	-.21**	-.19**	-.07	-.09	-.14**	.54**	.42**	.30**	.50**	.48**	.58**	.49**	.50**	.50**	.48**	.58**	.54**	.64**	--	
24. Depressive Symptoms	.28**	-.17**	-.10*	-.19**	-.19**	-.18**	-.12*	.11*	-.14**	.44**	.33**	.30**	.41**	.42**	.49**	.42**	.40**	.41**	.42**	.49**	.39**	.55**	.69**	--

*p<.05. **p<.01.
Note. EMS = Emotion Mindset Scale; Reappraisal = ERQ-CA Cognitive Reappraisal; Acceptance = RSQ Acceptance; Positive Thinking = RSQ Positive Thinking; Distraction = RSQ Distraction; Emotion Express = RSQ Emotional Expression; Emotion Regula = RSQ Emotion Regulation; Cognitive Restruc = RSQ Cognitive Restructuring; Wishful Think = RSQ Wishful Thinking; Avoidance = RSQ Avoidance; Denial = RSQ Denial; Impulsiv Action = RSQ Impulsive Action; Emotion Arousal = RSQ Emotional Arousal; Physiol Arousal = RSQ Physiological Arousal; Intrusive = RSQ Intrusive Thoughts; Rumination = RSQ Rumination; Escape = RSQ Escape; Emotion Numb = RSQ Emotional Numbing; Inaction = RSQ Inaction; Cognitive Int = RSQ Cognitive Interference; RRS = Rumination Response Scale (Brooding Subscale); DERS = Difficulties in Emotion Regulation Scale; Depressive Symptoms = Short Mood and Feelings Questionnaire.

REFERENCES

Aldao, A., Gee, D. G., De, L. R., & Seager, I. (2016). Emotion regulation as a transdiagnostic factor in the development of internalizing and externalizing psychopathology: Current and future directions. *Development and Psychopathology, 28*(4), 927-946. doi:http://dx.doi.org/10.1017/S0954579416000638

Angold, A., Costello, E. J., Messer, S. C., & Pickles, A. (1995). Development of a short questionnaire for use in epidemiological studies of depression in children and adolescents. *International Journal of Methods in Psychiatric Research*, *5*(4), 237–249.

Barlow, D. H. (2002). Fear, anxiety, and theories of emotion. In D. H. Barlow (Ed.), *Anxiety and its disorders: The nature and treatment of anxiety and panic* (pp. 37-63). New York, NY: Guilford Press

Bjureberg, J., Ljótsson, B., Tull, M. T., Hedman, E., Sahlin, H., Lundh, L., . . . Gratz, K. L. (2016). Development and validation of a brief version of the difficulties in emotion regulation scale: The DERS-16. *Journal of Psychopathology and Behavioral Assessment, 38*(2), 284-296. doi:http://dx.doi.org/10.1007/s10862-015-9514-x

Blackwell, L. S., Trzesniewski, K. H., & Dweck, C. S. (2007). Implicit theories of intelligence predict achievement across an adolescent transition: A longitudinal study and an intervention. *Child Development, 78*(1), 246-263. doi: http://dx.doi.org/10.1111/j.1467-8624.2007.00995.x

Blanchard-Fields, F., Coats, A. (2008). The experience of anger and sadness in everyday problems impacts age differences in emotion regulation. *Developmental Psychology, 44*, 1547–1556

Boden, M. T., & Thompson, R. J. (2015). Facets of emotional awareness and associations with

emotion regulation and depression. *Emotion*, *15*(3), 399-410.

Brown, K. W., & Ryan, R. (2003). The benefits of being present: Mindfulness and its role in

psychological well-being. *Journal of Personality and Social Psychology, 84*, 822– 848.

doi:10.1037/0022-3514.84.4.822

Chaplin, T. M., & Cole, P. M. (2005). The role of emotion regulation in the development of

psychopathology. In B.L. Hankin & J. R. Z. Abela (Eds.) *Development of*

psychopathology: A vulnerability-stress perspective, (49-74). Thousand Oaks, CA: Sage

Publications.

Chiu, C., Dweck, C. S., Tong, J. Y., & Fu, J. H. (1997). Implicit theories and conceptions of

morality. *Journal of Personality and Social Psychology, 73*(5), 923-940.

doi:http://dx.doi.org/10.1037/0022-3514.73.5.923

Chiu, C., Hong, Y., & Dweck, C. S. (1997). Lay dispositionism and implicit theories of

personality. *Journal of Personality and Social Psychology, 73*(1), 19-30.

doi:http://dx.doi.org/10.1037/0022-3514.73.1.19

Compas, B. E., Connor, J., Osowiecki, D., & Welch, A. (1997). Effortful and involuntary

responses to stress: Implications for coping with chronic stress. In B. H. Gottlieb

(Ed.), *Coping with chronic stress; coping with chronic stress* (pp. 105-130). New York,

NY: Plenum Press,. doi:http://dx.doi.org/10.1007/978-1-4757-9862-3_4.

Connor-Smith, J., Compas, B. E., Wadsworth, M. E., Thomsen, A. H., & Saltzman, H. (2000).

Responses to stress in adolescence: Measurement of coping and involuntary stress

responses. *Journal of Consulting and Clinical Psychology, 68*(6), 976-992.

doi:http://dx.doi.org/10.1037/0022-006X.68.6.976

De Castella, K., Goldin, P., Jazaieri, H., Ziv, M., Dweck, C. S., & Gross, J. J. (2013). Beliefs about emotion: Links to emotion regulation, well-being, and psychological distress. *Basic and Applied Social Psychology*, *35*(6), 497-505.

De Castella, K., Goldin, P., Jazaieri, H., Ziv, M., Heimberg, R. G., & Gross, J. J. (2014). Emotion beliefs in social anxiety disorder: Associations with stress, anxiety, and well-being. *Australian Journal of Psychology, 66*(2), 139-148. doi: http://dx.doi.org/10.1111/ajpy.12053

De Castella, K., Platow, M. J., Tamir, M., & Gross, J. J. (2018). Beliefs about emotion: implications for avoidance-based emotion regulation and psychological health. *Cognition and Emotion*, *32*(4), 773-795.

Dweck, C. S. (1996). Implicit theories as organizers of goals and behavior. In P. M. Gollwitzer, & J. A. Bargh (Eds.), *The psychology of action: Linking cognition and motivation to behavior,* (pp. 69-90). New York, NY: Guilford Press.

Dweck, C. S. (1999). *Self-theories: Their role in motivation, personality, and development.* New York, NY: Psychology Press.

Dweck, C. S. (2006). *Mindset: The new psychology of success.* New York, NY: Random House.

Dweck, C. S., & Leggett, E. L. (1988). A social-cognitive approach to motivation and personality. *Psychological Review, 95*(2), 256-273. doi:http://dx.doi.org/10.1037/0033-295X.95.2.256

Enders, C. K., & Bandalos, D. L. (2001). The relative performance of full information maximum likelihood estimation for missing data in structural equation models. *Structural Equation Modeling, 8*(3), 430-457. doi:http://dx.doi.org/10.1207/S15328007SEM0803_5

Erdley, C. A., Cain, K. M., Loomis, C. C., Dumas-Hines, F., & Dweck, C. S. (1997). Children's

    social goals and implicit theories as predictors of their responses to social

    failure. *Developmental Psychology*, *33*(2), 263-272.

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York, NY: Springer.

Ford, B. Q., Lwi, S. J., Gentzler, A. L., Hankin, B., & Mauss, I. B. (2018). The cost of believing

    emotions are uncontrollable: Youths' beliefs about emotion predict emotion regulation

    and depressive symptoms. *Journal of Experimental Psychology: General, 147*(8), 1170-

    1190. doi:http://dx.doi.org/10.1037/xge0000396

Garnefski, N., & Kraaij, V. (2006a). Cognitive emotion regulation questionnaire - development

    of a short 18-item version (CERQ-short). *Personality and Individual Differences, 41*(6),

    1045-1053. doi:http://dx.doi.org/10.1016/j.paid.2006.04.010

Garnefski, N., & Kraaij, V. (2006b). Relationships between cognitive emotion regulation

    strategies and depressive symptoms: A comparative study of five specific

    samples. *Personality and Individual Differences, 40*(8), 1659-1669.

    doi:http://dx.doi.org./10.1016/j.paid.2005.12.009

Gasper, K., & Clore, G. L. (2000). Do you have to pay attention to your feeling to be influenced

    by them? *Personality and Social Psychology Bulletin, 26*, 698 –711.

    http://dx.doi.org/10.1177/0146167200268005

Gohm, C. L., & Clore, G. L. (2002). Four latent traits of emotional experience and their

    involvement in well-being, coping, and attributional style. *Cognition and Emotion, 16*,

    495–518. http://dx.doi.org/10.1080/ 02699930143000374

Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes:

    Implications for affect, relationships, and well-being. *Journal of Personality and Social*

    Psychology, 85(2), 348-362. doi:http://dx.doi.org/10.1037/0022-3514.85.2.348

Gross, J. J. (1998). The emerging field of emotion regulation: An integrative review. *Review of*

    General Psychology, 2(3), 271-299. doi:http://dx.doi.org/10.1037/1089-2680.2.3.271

Gross, J. J. (2008). Emotion regulation. In M. Lewis, J. M. Haviland-Jones, & L. F. Barrett

    (Eds.), *Handbook of emotions* (pp. 497–512). New York, NY: Guilford Press.

Gross, J. J. (2014). *Handbook of emotion regulation* (2014). (2nd ed.) New York, NY: Guilford

    Press.

Gullone, E., & Taffe, J. (2012). The emotion regulation questionnaire for children and

    adolescents (ERQ–CA): A psychometric evaluation. *Psychological Assessment, 24*(2),

    409-417. doi:http://dx.doi.org/10.1037/a0025777

Hankin, B. L., Abramson, L. Y., Moffitt, T. E., Silva, P. A., McGee, R., & Angell, K. E. (1998).

    Development of depression from preadolescence to young adulthood: Emerging gender

    differences in a 10-year longitudinal study. *Journal of Abnormal Psychology, 107*(1),

    128-140. doi:http://dx.doi.org/10.1037/0021-843X.107.1.128

Hankin, B. L., Young, J. F., Abela, J. R. Z., Smolen, A., Jenness, J. L., Gulley, L. D., . . .

    Oppenheimer, C. W. (2015). Depression from childhood into late adolescence: Influence

    of gender, development, genetic susceptibility, and peer stress. *Journal of Abnormal*

    Psychology, 124(4), 803-816. doi:http://dx.doi.org/10.1037/abn0000089

Hill, C. L., & Updegraff, J. A. (2012). Mindfulness and its relationship to emotional

    regulation. *Emotion*, *12*(1), 81-90.

Howell, A. J. (2017). Believing in change: Reviewing the role of implicit theories in

    psychological dysfunction. *Journal of Social and Clinical Psychology, 36*, 437–460.

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis:

    Conventional criteria versus new alternatives. *Structural Equation Modeling, 6*, 1–55

Joormann, J., & Vanderlind, W. M. (2014). Emotion regulation in depression: The role of biased

    cognition and reduced cognitive control. *Clinical Psychological Science, 2*(4), 402-421.

    doi:http://dx.doi.org/10.1177/2167702614536163

Kappes, A., & Schikowski, A. (2013). Implicit theories of emotion shape regulation of negative

    affect. *Cognition and Emotion, 27*(5), 952-960. doi:

    http://dx.doi.org/10.1080/02699931.2012.753415

King, R. B., & dela Rosa, E. D. (2019). Are your emotions under your control or not? Implicit

    theories of emotion predict well-being via cognitive reappraisal. *Personality and*

    Individual Differences, 138, 177-182.

Kneeland, E. T., Dovidio, J. F., Joormann, J., & Clark, M. S. (2016). Emotion malleability

    beliefs, emotion regulation, and psychopathology: Integrating affective and clinical

    science. *Clinical Psychology Review, 45*, 81-88.

    doi:http://dx.doi./10.1016/j.cpr.2016.03.008

Kring, A. M., & Sloan, D. M. (2009*). Emotion regulation and psychopathology: A*

    transdiagnostic approach to etiology and treatment (2010). The Guilford Press, New

    York, NY.

Livingstone, K. M. (2012). *The Effects of Implicit Theories of Emotion on Emotion Regulation*

    and Experience (Unpublished dissertation). University of Oregon, Eugene, Oregon.

Miu, A. S., & Yeager, D. S. (2015). Preventing symptoms of depression by teaching adolescents

 that people can change: Effects of a brief incremental theory of personality intervention

 at 9-month follow-up. *Clinical Psychological Science, 3*(5), 726-743.

 doi:http://dx.doi.org/10.1177/2167702614548317

Muthén, L.K. and Muthén, B.O. (1998-2017). Mplus User's Guide. Eighth Edition. Los

 Angeles, CA: Muthén & Muthén

Nolen-Hoeksema, S. (2000). Further evidence for the role of psychosocial factors in depression

 chronicity. *Clinical Psychology: Science and Practice, 7*(2), 224-227.

 doi:http://dx.doi.org /10.1093/clipsy/7.2.224

Nolen-Hoeksema, S., Aldao, A. (2011). Gender and age differences in emotion regulation

 strategies and their relationship to depressive symptoms. *Personality and Individual*

 Differences, 51, 704–708.

Pascual, A., Conejero, S., & Etxebarria, I. (2016). Coping strategies and emotion regulation in

 adolescents: Adequacy and gender differences. Ansiedad y Estrés, 22(1), 1-4.

 doi:http://dx.doi.org/10.1016/j.anyes.2016.04.002

Plaks, J. E., Levy, S. R., & Dweck, C. S. (2009). Lay theories of personality: Cornerstones of

 meaning in social cognition. *Social and Personality Psychology Compass*, *3*(6), 1069-

 1081.

Roelofs, J., Muris, P., Huibers, M., Peeters, F., & Arntz, A. (2006). On the measurement of

 rumination: A psychometric evaluation of the ruminative response scale and the

 rumination on sadness scale in undergraduates. *Journal of Behavior Therapy and*

 Experimental Psychiatry, 37(4), 299-313.

 doi:http://dx.doi.org/10.1016/j.jbtep.2006.03.002

Romero, C., Master, A., Paunesku, D., Dweck, C. S., & Gross, J. J. (2014). Academic and
emotional functioning in middle school: The role of implicit theories. *Emotion, 14*(2),
227-234.http://dx.doi.org/10.1037/a0035490

Rudolph, K. D. (2009). The interpersonal context of adolescent depression. In S. Nolen-
Hoeksema, & L. M. Hilt (Eds.), *Handbook of depression in adolescents* (pp. 377-418).
New York, NY: Routledge/Taylor & Francis Group,.

Rudolph, K. D. (2009). Adolescent depression. In *Handbook of Depression* (pp. 444–466). New
York, NY: The Guilford Press.

Saarni, C., Campos, J. J., Camras, L. A., Witherington, D. (2006). Emotional development:
Action, communication, and understanding. In Eisenberg, N. (Ed.), *Handbook of child
psychology. Social, emotional, and personality development* (pp. 226–299). New York,
NY: Wiley.

Schafer, J. L. (1997). *Analysis of incomplete multivariate data*. New York, NY: Chapman and
Hall/CRC.

Schleider, J. L., & Weisz, J. R. (2016a). Implicit Theories Relate to Youth Psychopathology, But
How? A Longitudinal Test of Two Predictive Models. *Child Psychiatry and Human
Development*, *47*(4), 603–617. https://doi.org/10.1007/s10578-015-0595-2

Schleider, J. L., & Weisz, J. R. (2016b). Mental Health and Implicit Theories of Thoughts,
Feelings, and Behavior in Early Adolescents: Are Girls at Greater Risk? *Journal of Social
and Clinical Psychology*, *35*(2), 130–151. https://doi.org/10.1521/jscp.2016.35.2.130

Schleider, J. L., & Weisz, J. R. (2016c). Reducing risk for anxiety and depression in adolescents:
Effects of a single-session intervention teaching that personality can change. *Behaviour
research and therapy*, *87*, 170-181.

Schroder, H. S., Dawood, S., Yalch, M. M., Donnellan, M. B., & Moser, J. S. (2015). The role of

implicit theories in mental health symptoms, emotion regulation, and hypothetical

treatment choices in college students. *Cognitive Therapy and Research, 39*(2), 120-139.

doi:http://dx.doi.org /10.1007/s10608-014-9652-6

Schroder, H. S., Dawood, S., Yalch, M. M., Donnellan, M. B., & Moser, J. S. (2016). Evaluating

the domain specificity of mental health–related mind-sets. *Social Psychological and

Personality Science, 7*(6), 508-520. doi:http://dx.doi.org/10.1177/1948550616644657

Schroder, H. S., Kneeland, E. T., Silverman, A. L., Beard, C., & Björgvinsson, T. (2019). Beliefs

about the malleability of anxiety and general emotions and their relation to treatment

outcomes in acute psychiatric treatment. *Cognitive Therapy and Research, 43*(2), 312-

323. doi:http://dx.doi.org/10.1007/s10608-018-9985-7

Shields, S. A. (2013). Gender and emotion: What we think we know, what we need to know, and

why it matters. *Psychology of Women Quarterly, 37*(4), 423-435.

doi:http://dx.doi.org/10.1177/0361684313502312

Shrout, P. E., & Bolger, N. (2002). Mediation in experimental and nonexperimental studies: New

procedures and recommendations. *Psychological Methods, 7*(4), 422-445.

doi:http://dx.doi.org/10.1037/1082-989X.7.4.422

Silk, J. S., Steinberg, L., & Morris, A. S. (2003). Adolescents' emotion regulation in daily life:

Links to depressive symptoms and problem behavior. *Child Development, 74*(6), 1869-

1880.

Smith, E. N., Romero, C., Donovan, B., Herter, R., Paunesku, D., Cohen, G. L., . . . Gross, J. J.

(2018). Emotion theories and adolescent well-being: Results of an online

intervention. *Emotion, 18*(6), 781-788. doi:http://dx.doi.org/10.1037/emo0000379

Tamir, M., John, O. P., Srivastava, S., & Gross, J. J. (2007). Implicit theories of emotion: Affective and social outcomes across a major life transition. *Journal of Personality and Social Psychology, 92*(4), 731-744. doi:http://dx.doi.org/10.1037/0022-3514.92.4.731

Tamres, L. K., Janicki, D., & Helgeson, V. S. (2002). Sex differences in coping behavior: A meta-analytic review and an examination of relative coping. *Personality and Social Psychology Review, 6*(1), 2-30. doi:http://dx.doi.org/10.1207/S15327957PSPR0601_1

Tamir, M., & Mauss, I. B. (2011). Social cognitive factors in emotion regulation: Implications for well-being. In I. Nykliček, A. Vingerhoets & M. Zeelenberg (Eds.), *Emotion regulation and well-being* (pp. 31-47). New York, NY: Springer Science + Business Media. doi:http://dx.doi.org/10.1007/978-1-4419-6953-8_3

Thapar, A., & McGuffin, P. (1998). Validity of the shortened mood and feelings questionnaire in a community sample of children and adolescents: A preliminary research note. *Psychiatry Research*, *81*, 259–268. https://doi.org/10.1016/S0165-1781(98)00073-0

Treynor, W., Gonzalez, R., & Nolen-Hoeksema, S. (2003). Rumination reconsidered: A psychometric analysis. *Cognitive Therapy and Research, 27*(3), 247-259. doi:http://dx.doi.org/10.1023/A:1023910315561

Troop-Gordon, W., Rudolph, K. D., Sugimura, N., & Little, T. D. (2015). Peer victimization in middle childhood impedes adaptive responses to stress: A pathway to depressive symptoms. *Journal of Clinical Child and Adolescent Psychology, 44*(3), 432-445. doi:http://dx.doi.org/10.1080/15374416.2014.891225

Vierhaus, M., Lohaus, A., Ball, J. (2007). Developmental changes in coping: Situational and methodological influences. *Anxiety, Stress and Coping, 20*, 267–282.

Werner, K., & Gross, J. J. (2010). Emotion regulation and psychopathology: A conceptual framework. In A. M. Kring, & D. M. Sloan (Eds.), *Emotion regulation and psychopathology: A transdiagnostic approach to etiology and treatment.* (pp. 13-37). New York, NY: The Guilford Press.

Yeager, D. S., & Dweck, C. S. (2012). Mindsets that promote resilience: When students believe that personal characteristics can be developed. *Educational Psychologist, 47*(4), 302-314. doi:http://dx.doi.org/10.1080/00461520.2012.7228

Yeager, D. S., & Miu, A. (2011). Implicit theories of personality predict motivation to use prosocial coping strategies after bullying in high school. In E. Frydenberg & G. Reevy (Eds.), *Personality, stress and coping: Implications for education* (pp. 47–62). Charlotte, NC: Information Age.

Yeager, D. S., Johnson, R., Spitzer, B. J., Trzesniewski, K. H., Powers, J., & Dweck, C. S. (2014). The far-reaching effects of believing people can change: Implicit theories of personality shape stress, health, and achievement during adolescence. *Journal of Personality and Social Psychology, 106*(6), 867-884. doi: http://dx.doi.org/10.1037/a0036335

Yurgelun-Todd, D. (2007). Emotional and cognitive changes during adolescence. *Current Opinion in Neurobiology, 17*(2), 251-257. doi:http://dx.doi.org/10.1016/j.conb.2007.03.009

Zimmermann, P., & Iwanski, A. (2014). Emotion regulation from early adolescence to emerging adulthood and middle adulthood: Age differences, gender differences, and emotion-specific developmental variations. *International Journal of Behavioral Development, 38*(2), 182-194. doi:http://dx.doi.org/10.1177/0165025413515