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Emotion Regulation Strategies in Depression and Somatization Disorder

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Abstract

Scant research has investigated emotion regulation strategies in somatization disorder, despite its high comorbidity with depression and the growing interest in this topic in depression. The present study investigated emotion regulation strategies in patients with major depression and somatization disorder using clinical samples to examine common vulnerability factors and to provide evidence for difficulties in emotion regulation as transdiagnostic factors in these disorders. Patients with major depressive disorder ($n = 30$) and patients with somatization disorder

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($n = 30$) completed measures of putatively adaptive and maladaptive emotion regulation strategy use. Patients with somatization disorder showed higher scores on measures of regulatory strategies, as measured by the sum of adaptive strategies in the Cognitive Emotion Regulation Questionnaire as well as the following subscales: positive refocusing, positive reappraisal, and refocusing on a plan. After controlling for levels of current depression, the significant effects remained for positive refocusing. Depression symptom severity was significantly and negatively correlated with most adaptive strategies and positively correlated with most maladaptive strategies. The current results provide preliminary data for a similar pattern of adaptive and maladaptive emotion regulation strategies usage in these two disorders. The results also contribute to theories of psychopathology and our understanding of critical cognitive and emotional processes.

Keywords
Major depression, somatization disorder, emotion regulation

Introduction

There is ongoing interest in the processes by which individuals regulate their emotional responses to situational demands (e.g., D'Avanzato, Joormann, Siemer, & Gotlib, 2013; Joormann & Gotlib, 2010; Rottenberg & Gross, 2003). However, compared to the numerous studies related to emotion regulation in depression, anxiety, and other disorders (see Aldao, 2013 for review), relatively little research has investigated emotion regulation strategies in somatization disorder (SD). SD is characterized by somatic symptoms such as multiple pain sites and gastrointestinal, reproductive, and pseudoneurological problems (Witthöft, Gerlach, & Bailer, 2006). Patients tend to describe minor automatic sensations in a catastrophic manner, which leads to elevated frequency of reported physical symptoms (Kroenke, 2007). As a result, patients often seek repeated medical consultation, which produces distress and disability for the patients as well as significant health-care costs (Barsky, Orav, & Bates, 2005). SD is highly comorbid with emotional disorders such as depression (Henningsen & Lowe, 2006; Mergl et al., 2007). Comparing emotion regulation in depression and somatization can therefore elucidate common vulnerability factors and provide evidence for difficulties in emotion regulation as transdiagnostic factors underlying psychopathology (Ehring & Watkins, 2008; Moses & Barlow, 2006). These transdiagnostic regulatory strategies can in turn inform unified models of emotional and comorbid disorders (Barlow, Allen, & Choate, 2004).

Theoretical basis of cognitive emotion regulation

There is a strong theoretical basis for the existence of emotion dysregulation in both somatization and depression disorders. A perceived inability to control emotions is a chief clinical complaint of depressed individuals, including reports of constant sadness, feeling numb, and not understanding feelings (see Rottenberg, 2017 for review). According to cognitive theories of emotion, cognitive appraisal determines whether an emotion is experienced and which emotion is experienced. Hence, cognition is conceptualized as the primary route through which emotions are regulated. Biases and deficits in cognitive functioning, therefore, are posited to affect individuals' ability to regulate emotion and increase their vulnerability to develop emotional disorders such as depression (see Joormann & Gotlib, 2010 for review).

In contrast to cognitive models of depression, SD researchers suggest that limited capacities to use cognitive mechanisms to understand and regulate emotions lead patients with SD to focus on, amplify, and misinterpret the bodily sensations that accompany emotional arousal (Taylor, Bagby, & Parker, 1997). Failure to regulate and modulate emotions at the cognitive level during stressful times may result in exaggerated physiological and behavioral responses and increased vulnerability to somatic disorders, such as somatization (Martin & Pihl, 1985). Hence, theories in both depression and somatization suggest the existence of difficulties in cognitive and emotion regulation in each disorder.

Emotional awareness and expression in depression and somatization

Studies that compared emotional experiences in depression and somatization have largely focused on emotional labeling and expression. There is consistent evidence of difficulties in identification and communication of emotions in SD (De Gucht & Heiser, 2003). In addition, a study by Bankier, Aginer, and Bach (2001) found that both depression and somatization are associated with difficulties in identifying feelings and distinguishing them from bodily sensations. Interestingly, the same study found difficulty in expressing feelings in somatic patients but not in patients with depression (Bankier et al., 2001). Although this study did not directly assess cognitive emotion regulation, the results suggest some common difficulties in emotional experience, such as labeling, but differences in other aspects, such as expression.

The exclusive focus on emotional awareness and labeling and the lack of research on emotion regulation in studies that examined depression and somatization is problematic. While there exist theories that emphasize the importance of awareness of emotions, awareness of emotion-related sensations, and clarity about emotions in predicting psychopathology (Feldman-Barrett, Gross, Christensen, & Benvenuto, 2001; Marchesi, Fonto, Balista, Cimmino, &

Maggini, 2005), emotional awareness may not be as important as other aspects of emotional experience (Berking et al., 2008). Berking et al. (2008) found emotional awareness only moderately contributed in overall psychopathology, while modification, resilience, and acceptance of negative emotions were strongly and consistently related to mental health. They suggest that emotional awareness may be important in psychopathology only to the extent that it facilitates the application of crucial skills of modifying, accepting, and tolerating emotions. Comparing cognitive and emotion regulation strategies in depression and somatization, then, has the potential to identify similarities and differences in regulatory strategy use, which can be used as effective treatment targets for each disorder.

Adaptive versus maladaptive emotion regulation

Emotion regulation strategies vary in their ability to facilitate adaptive versus maladaptive responding (see Table 1). Strategies such as rumination, suppression, and avoidance are linked to maladaptive outcomes (e.g., Campbell-Sills, Barlow, Brown, & Hoffmann, 2006), while strategies such as cognitive reappraisal, acceptance, and problem-solving are associated with adaptive outcomes (e.g., Goldin, McRae, Ramel, & Gross, 2007). These putatively adaptive strategies are important components of a variety of treatment models, ranging from traditional cognitive-behavioral therapy to approaches such as dialectical

Table 1. Emotion regulation strategies.

Emotion regulation strategy	Description
Self-blame	Thoughts of putting the blame for what one have experienced on oneself.
Acceptance	Thoughts of accepting what one have experienced and resigning oneself to what has happened.
Focus on thought/rumination	Thinking about the feelings and thoughts associated with the negative event.
Positive refocusing	Thinking about joyful and pleasant issues instead of thinking about the actual event.
Refocus on planning	Thinking about what steps to take and how to handle the negative event.
Positive reappraisal	Thoughts of creating a positive meaning to the event in terms of personal growth.
Putting into perspective	Thoughts of brushing aside the seriousness of the event/emphasizing the relativity when comparing it to other events.
Catastrophizing	Thoughts of explicitly emphasizing the terror of what one has experienced.
Blaming others	Thoughts of putting the blame for what one have experienced on the environment or another person.

behavioral therapy (Beck, Rush, Shaw, & Emery, 1979; Clark & Wells, 1995; Linehan, 1993). Preliminary evidence suggests effectiveness of emotion regulation strategies in a variety of psychological disorders including depression (Lynch, Morse, Mendelson, & Robins, 2003), generalized anxiety disorder (Mennin, Heimberg, Turk, & Fresco, 2002), and substance abuse (Linehan et al., 2002). There is, however, a scarcity of research on emotion regulation in SD, despite its high comorbidity and symptom overlap with disorders such as depression (Henningsen & Lowe, 2006; Mergl et al., 2007).

While most studies have demonstrated a negative relation between depression and putatively maladaptive emotion regulation strategies (e.g., Aldao & Nolen-Hoeksema, 2010; Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008), the link between depression and putatively adaptive emotion regulation strategies is less clear. A meta-analysis by Aldao, Nolen-Hoeksema, and Schweizer (2010) found depression to be positively associated with maladaptive strategies such as avoidance, rumination, and suppression. However, while depression was negatively associated with some adaptive strategies such as problem-solving and reappraisal, there were no relations with other adaptive strategies such as acceptance. In addition, depression has been negatively associated with adaptive strategies such as reappraisal (D'Avanzato et al., 2013; Garnefski & Kraaij, 2006; Joormann & Gotlib, 2010), other studies did not find this association (Kovacs, Rottenberg, & George, 2009). Importantly, a study found that adaptive regulatory strategies were predictive of psychopathology only when there is greater endorsement of maladaptive regulatory strategies (Aldao & Nolen-Hoeksema, 2012). Hence, the relations between depression and regulatory strategies, particularly adaptive ones, warrant more research.

Apart from lack of consistent findings on adaptive strategies in depression, there is also little evidence as to which putatively adaptive versus maladaptive strategies are relevant to SD. Cognitive emotion regulation strategies theorized to be protective against psychopathology are reappraisal (e.g., Beck, 1976) and problem-solving (e.g., D'Zurilla, 1988). Two strategies that are commonly linked to development and maintenance of psychopathology are thought suppression (e.g., Borton, Markowitz, & Dieterich, 2005) and rumination (e.g., Nolen-Hoeksema et al., 2008). However, this limited body of work (see Rottenberg, 2017) constrains the extrapolations that can be made for emotion regulation in individuals with clinical depression and SD.

The present study

The present study is the first to investigate shared and distinct emotion regulation strategies in depression and SD using a clinical sample, and so significantly contributed to our understanding of emotion regulation difficulties in these disorders. Due to the lack of prior research, the present study comprehensively explored the differential cognitive and emotion regulation strategies in

depression and SD. Consistent with previous evidence, it was predicted that patients with depression and SD would exhibit relatively distinct patterns of cognitive and emotion regulation strategies, and that symptom severity for depression and SD would correlate positively and negatively with the use of maladaptive and adaptive emotion regulation, respectively.

Method

Participants

Thirty patients with major depressive disorder (MDD) and 30 patients with SD were recruited from a single hospital or psychiatric clinic in Tehran, Iran, and all were receiving medication therapy for their respective disorders at the time of recruitment. Inclusion criteria included a primary diagnosis of MDD or SD based on the Structured Clinical Interview for DSM-IV (SCID-I; First, Spitzer, Gibbon, & Williams, 1996). It is noted that patients diagnosed with SD typically meet the DSM-V criteria for somatic symptom disorder (American Psychiatric Association, 2013). The SCID was administered by a trained psychiatrist (AAN). Inclusion criteria for the MDD group also included moderate to severe scores on the Beck Depression Inventory (BDI; Beck, Steer, & Brown, 1996), while inclusion criteria for the SD group included mild BDI scores. These inclusion criteria were designed to yield participants that would match patients who typically receive treatment for MDD or SD in a community clinic. Exclusion criteria for both groups included the presence of a current psychotic disorder, a current manic disorder, a current alcohol or drug abuse/dependence, or a current cognitive disorder, including dementia, delirium, and amnesia.

Measures

Beck Depression Inventory-II. The BDI-II consists of 21 items with a range from 0 to 3 (total score range: 0–63; Beck et al., 1996). Higher scores reflect higher levels of depressive symptom severity. The BDI is widely used and has well-documented psychometric properties (e.g., Beck, Steer, & Garbin, 1988; Dozois, Dobson, & Ahnberg, 1998). The Iranian version of the BDI-II has demonstrated adequate validity and reliability in Iranian samples (Dobson & Mohammadkhani, 2007; Ghassemzadeh, Mojtabai, Karamghadiri, & Ebrahimkhani, 2005). Cronbach's α in the current sample was .83.

Cognitive Emotion Regulation Questionnaire. The Cognitive Emotion Regulation Questionnaire (CERQ) consists of 36 items that participants score from 1 (*almost never*) to 6 (*almost always*) (Garnefski, Kraaij, & Spinhoven, 2001). Higher scores reflect more frequent use of a specific cognitive emotion regulation strategy. Adequate psychometric properties have been demonstrated for the

CERQ (Garnefski & Kraaij, 2006). The CERQ has been translated and used in Iranian samples and has demonstrated adequate validity and reliability (Abdi, Taban, & Ghaemian, 2011). Cronbach's α for the CERQ in the current sample was .85.

Procedure

Study information was provided to potential participants who met the inclusion criteria and did not meet the exclusion criteria. Individuals who expressed interest in the study provided informed consent and were administered the SCID-I to determine their eligibility for the study. Eligible participants were administered a battery of questionnaires, including a demographic questionnaire, the BDI-II, and the CERQ. The diagnostic interview and assessment battery were typically completed during a single session of about 2 hours.

Statistical analyses

Participant characteristics are presented in Table 2. Independent sample t tests indicated that the depressed group and the somatization group were not statistically different in terms of relevant demographic and clinical variables, with the exception of BDI scores. The MDD group scored significantly higher than the somatization group, $t(57) = 4.7$, $p < .001$, $d = 1.25$. The CERQ scores for one

Table 2. Participant characteristics by experimental group.

Variables	Major depression ($n = 29$) Mean (*SD*)	Somatization disorder ($n = 30$) Mean (*SD*)	Total sample ($n = 59$) Mean (*SD*)
Age	36.72 (9.72)	41.2 (9.47)	39.0 (9.78)
BDI	34.34 (11.58)	20.66 (10.74)	37.39 (12.04)
	% (*n*)	% (*n*)	% (*n*)
Female gender	68.9 (20)	60.0 (18)	64.4
Single	37.9 (11)	20 (6)	28.8
Married	55.1 (16)	76.6 (23)	66.1
Divorced	3.4 (1)	3.33 (1)	5.1
Other	3.4 (1)	0	1.7 (1)
Graduate degree	0	13.3 (4)	6.8
Bachelor degree	41.3 (12)	30 (9)	35.6
Diploma	37.9 (11)	46.6 (14)	42.4
Other	20.6 (6)	10 (3)	15.3

Note: Analyses of variance were conducted on continuous variables, and χ^2 test for other variables. All group comparisons were not statistically significant, except for BDI.
SD: standard deviation; *n*: sample size; BDI: Beck Depression Inventory.

participant in the depressed group were invalid, and hence this participant's data were excluded from these analyses. In this study, statistical significance was considered as any result with a probability value less than .05.

Results

Between-group comparisons of cognitive emotion regulation strategies

Mean scores and standard deviations on the CERQ subscales are shown in Table 3. A multivariate analysis of variance with all CERQ subscales revealed significant differences across participant groups, $F(1, 49) = 2.23$, $p < .05$, $\eta_p^2 = .291$, although there was no significant group differences on the total CERQ score, $F(1, 57) = 0.47$, $p = .496$, $\eta_p^2 = .008$. Specifically, the somatic group scored significantly higher than the depressive group on the subscales positive refocus, $F(1, 57) = 17.03$, $p < .001$, $\eta_p^2 = .230$, and positive reappraisal, $F(1, 57) = 4.23$, $p = .044$, $\eta_p^2 = .069$. The somatic group also scored marginally higher than the depressive group on the subscale refocus on planning, $F(1, 57) = 3.94$, $p = .052$, $\eta_p^2 = .065$. There were no significant between-group differences in

Table 3. Cognitive emotion regulation by experimental group with and without BDI scores controlled.

	Depression ($n = 29$)		Somatization ($n = 30$)			
Measure	*M*	*SD*	*M*	*SD*	$F(1, 57)$[a]	$F(1, 56)$[b]
CERQ total	111.35	17.05	114.70	20.39	0.47	0.93
Self-blame	12.66	3.97	11.57	4.14	1.06	0.54
Acceptance	13.79	3.69	13.20	3.94	0.36	0.13
Focus on thought/ rumination	14.57	3.85	14.20	3.98	0.14	0.57
Positive refocusing	9.69	3.56	13.37	3.29	17.03***	5.84*
Refocus on planning	12.66	3.61	14.60	3.91	3.94	1.58
Positive reappraisal	10.95	4.10	13.00	4.03	4.23**	0.10
Putting into perspective	12.07	3.91	13.27	3.03	1.74	0.002
Catastrophizing	13.31	3.78	11.57	4.27	2.75	0.021
Blaming others	11.72	3.91	9.93	4.44	2.70	0.073
Adaptive total	59.07	13.29	67.43	12.76	6.08*	1.08
Maladaptive total	52.28	11.15	47.27	12.43	2.65	0.23

Note: *SD*: standard deviation; *n*: sample size; CERQ: Cognitive Emotion Regulation Questionnaire; BDI: Beck Depression Inventory.

[a]Multivariate analysis of variance.

[b]Multivariate analysis of covariance with BDI scores controlled.

*$p < .05$; **$p < .01$; ***$p < .001$.

scores on the subscales self-blame, acceptance, rumination, putting into perspective, catastrophizing, and blaming others, $p > .10$.

Scores on CERQ subscales were aggregated to form adaptive strategies, consisting of acceptance, positive refocusing, refocus of a plan, positive reappraisal, and putting into perspective, and maladaptive strategies, consisting of self-blame, rumination, catastrophizing, and blaming others. An analysis of variance revealed significant group differences in adaptive strategies, where somatic participants had higher scores, $F(1, 57) = 6.08$, $p < .05$, $\eta_p^2 = .096$, but no group differences for maladaptive strategies, $F(1, 57) = 2.65$, $p < .109$, $\eta_p^2 = .044$.

To control for depression severity in between-group differences, a multivariate analysis of covariance on CERQ subscales controlling for BDI scores was conducted. There was no overall group difference for the subscales, $F(1, 48) = 0.87$, $p = .558$, $\eta_p^2 = .140$, or the overall CERQ score, $F(1, 56) = 0.93$, $p = .339$, $\eta_p^2 = .016$. Specifically, the somatic group scored significantly higher than the depressive group on the positive refocus subscale, $F(1, 56) = 5.84$, $p < .05$, $\eta_p^2 = .094$ (see Table 3). No significant group differences were found on the remaining subscales, including the adaptive and maladaptive strategies aggregate scales, $p > .10$.

BDI scores were predicted using a hierarchical linear regression. Adaptive and maladaptive strategies composite scores were entered in the first step, and they contributed significantly to the prediction of BDI, $F(2, 56) = 19.75$, $p < .001$, $\Delta R^2 = .414$. Individually, both adaptive strategies and maladaptive strategies were significant predictors of BDI, $\beta = -.40$, $t = -4.09$, $p = .003$, and $\beta = .56$, $t = 5.05$, $p < .001$, respectively. The interaction term between adaptive and maladaptive strategies was entered in the second step, but it was nonsignificant, $\beta = -.01$, $t = -.62$, $p = 538$.

Correlations between early maladaptive schemas and other variables

To examine the relationship between emotion regulation strategies and depression, Pearson correlation coefficients were calculated with Bonferroni corrections (see Table 4). Significant negative correlations were observed between BDI and scores on the subscales positive refocusing, positive reappraisal, putting into perspective, and the adaptive strategies composite score. Significant positive correlations were observed between BDI and scores on the subscales self-blame, catastrophizing, blaming others, and the maladaptive strategies composite score. BDI also had a marginally positive correlation with rumination, $r = .251$, $p = .055$.

Discussion

This study explored differential patterns of emotion regulation strategies in depression and SD using a clinical sample. Patients with SD showed higher

Table 4. Correlations between early maladaptive schema domains and depression.

Scale	1	2	3	4	5	6	7	8	9	10	11	12	13
1. BDI	.830												
2. Self-blame	.400**	.758											
3. Acceptance	.225	.166	.723										
4. Focus on thought/ rumination	.251	.392**	.323*	.795									
5. Positive refocusing	−.473**	.016	.125	.068	.734								
6. Refocus on planning	−.221	.109	.379**	.232	.699**	.688							
7. Positive reappraisal	−.554**	−.088	−.009	−.253	.592**	.515**	.804						
8. Putting into perspective	−.316*	.05	.041	−.016	.407**	.455**	.562**	.688					
9. Catastrophizing	.434**	.383**	.445**	.546**	−.178	.049	−.359**	.006	.753				
10. Blaming others	.348**	.085	.275*	.410**	−.074	.118	−.121	.048	.526**	.857			
11. Adaptive composite score	−.383**	.068	.431**	.095	.802**	.862**	.759**	.685**	−.019	.065	.859		
12. Maladaptive composite score	.488**	.627**	.410**	.789**	−.06	.171	−.277*	.031	.835**	.696**	.07	.867	
13. CERQ total	.034	.450**	.575**	.574**	.543**	.734**	.373**	.516**	.520**	.492**	.770**	.691**	.850

Note: Off-diagonal shows correlation coefficients; diagonal shows internal reliability coefficients.
BDI: Beck Depression Inventory; CERQ: Cognitive Emotion Regulation Questionnaire.
*$p < .05$; **$p < .01$.

scores on measures of adaptive emotion regulation strategies and specifically positive refocusing, positive reappraisal, and refocusing on a plan. After controlling for levels of current depression, the significant effects remained for positive refocusing. Furthermore, depressive symptom severity was significantly negatively correlated with most adaptive emotion regulation strategies and positively correlated with most maladaptive strategies.

The differences in the use of adaptive emotion regulation strategies among the two groups are partially accounted for by symptom severity. After controlling for depression symptom severity, the significant effects remained only for positive refocusing. The depressed patient group can be conceptualized to have more severe symptoms than the somatization group, as depression is characterized by both somatic (i.e., appetite loss, sleep disturbance) and psychological (i.e., depressed mood, hopelessness) symptoms, whereas SD is mainly characterized by somatic symptoms (American Psychiatric Association, 2013). Hence, it is possible that the psychological symptoms, most of which were captured by the BDI, are associated with reduced use of adaptive regulatory strategies. However, it is unclear why the significant group difference of positive refocusing remained significant with depression symptoms controlled. Future studies are needed to assess for both psychological and somatic symptoms in both clinical inpatient groups to further examine this result.

The current results are consistent with Bankier et al.'s (2001) observation that both depression and somatization are associated with difficulties in identifying feelings and distinguishing them from bodily sensations. However, somatic patients in the current study engaged in greater use of adaptive strategies, which is puzzling as difficulties in identifying emotions should hinder effective communication of emotional experiences, which may result in maladaptive strategy use. It may be that the valence of emotions affects the relations among emotion expression, regulation, and outcome. For instance, while difficulty in identifying and expressing negative emotions may be crucial for effective regulation of these emotions, the identification and expression of positive emotions may not be as important for adaptation. Hence, it is possible that the two groups differ in the extent to which they experience positive versus negative emotions, thus affecting their use of adaptive and maladaptive strategies. Second and more broadly, the relation among emotional identification, expression, and regulation may be nuanced. There is growing interest in emotion regulation flexibility, the extent to which individuals can flexibility select and update regulatory strategies based on context and feedback on the effectiveness of emotion regulation (see reviews by Aldao, 2013 and Bonanno & Burton, 2013). Future studies that examine emotion expression, emotion valence, emotion regulating, and regulatory flexibility together should examine on the interplay among different components of emotional experience in both depression and somatization.

Carlier et al. (2014) found that individuals with depression exhibited higher scores on emotional dysregulation than individuals with pure somatoform disorder, which is divergent from the current study. Two possibilities can account for this difference. First, the current study used measures of self-blame, catastrophizing, rumination, and blaming others, while Carlier et al.'s study measured submissiveness, cognitive distortion, identity problems, affective lability, oppositionality, anxiousness, suspiciousness, social avoidance, narcissism, insecure attachment, and self-harm. Thus, the overall construct of emotion dysregulation in Carlier's study is a better characterization of personality pathology than maladaptive emotion regulation (Carlier et al., 2014). Second, while Carlier et al. used individuals with pure depression, our study did not exclude participants in the depression group based on the presence of somatic symptoms. In our study, when depressive symptom severity was controlled, the emotion regulation patterns among the two groups became similar. Thus, differences in findings across these two studies may reflect the measurement of fundamentally different, albeit similar worded constructs, as well as differences in exclusion criteria for the depression group.

The current correlations between the depressive symptoms and the use of maladaptive and adaptive emotion regulation strategies are consistent with the existing literature (e.g., Aldao & Nolen-Hoeksema, 2010; Nolen-Hoeksema et al., 2008). Further, the magnitude of correlation between BDI and the maladaptive strategies composite score is higher than that of the adaptive strategies composite score. A similar pattern was found when comparing the magnitude of the correlations between depression and the individual adaptive and maladaptive strategies. Other research has found maladaptive emotion regulation to be more strongly associated with psychopathology than adaptive strategies (e.g., Aldao & Nolen-Hoeksema, 2010; Aldao et al., 2010). However, several incongruences exist between the present study and other literature related to the correlation between depressive symptoms and emotion regulation. First, the magnitude of positive reappraisal and positive refocusing with BDI was higher than that of all individual maladaptive strategies. Additionally, a study by Aldao and Nolen-Hoeksema (2012) found the use of adaptive emotion regulation strategies to be negatively associated with psychopathology only at high levels of maladaptive strategy use. However, our results did not replicate this finding, as the interaction between adaptive and maladaptive strategies did not have incremental predictive power over the individual composite scores.

The discrepancies between the current and previous studies can be explained by several factors. First, while both depression and somatization are characterized by difficulties with emotional awareness and labeling (Bankier et al., 2001), this difficulty may be more pronounced in depression due to symptom severity, as depression is characterized by both somatic and psychological symptoms. Second, the excessive help-seeking behavior in somatization can be

conceptualized as an adaptive coping strategy, which is the opposite of avoidance that is present in depression. Hence, this difference in help-seeking behavior may have differentially influenced emotion regulation habits. It is also possible that the treatment received by the patients in the current study may have targeted the use of maladaptive regulation strategies. Finally, differences may be attributed to samples. For instance, the study by Aldao & Nolen-Hoeksema (2010) used a college sample, while the present study used a clinical sample. Sample characteristics, such as symptom severity and level of functioning, can affect the use of emotion regulation strategies. Thus, more research is needed to examine the complex relations between depression and somatization with emotion regulation strategies.

Strengths, limitations, and future directions

The use of clinically diagnosed patients is a major strength of the study. The current sample is likely to be representative of typical outpatients, which increases the generalizability of the results to clinical populations. Another strength of the present study was the usage of well-validated measures for cognitive and emotion regulation strategies. Finally, the study had adequate sample sizes for the patient groups for statistical analyses.

The current investigation has several limitations. The lack of a nonclinical control group prevented controlling for the common characteristics associated with having any mental disorder (e.g., distress, frustrations with navigating the mental health-care system, poor functioning). Second, although the CERQ is a well-validated inventory for assessing emotion regulation, the use of self-reports increases the probability of shared method variance, which may in turn inflate the correlations among the measured variables. In addition, self-reports may not be the most suitable assessment method to assess implicit processes such as emotion regulation, as these processes may eventuate in an automatic and impulsive way (Riebel, Egloff, & Witthöft, 2014). Other methods are required to comprehensively assess both explicit (i.e., effortful) and implicit (i.e., automatic) forms of emotion regulation (Gyurak, Gross, & Etkin, 2011). Third, the cross-sectional design of the study precludes conclusions about directionality in the relation among emotion regulation strategies, depression, and somatization. Future research that uses a prospective design will help to determine the temporal relations among emotion regulation, depression, and somatization and to identify the use or nonuse of adaptive and maladaptive strategies as either manifestations or vulnerability factors for psychopathology. Fourth, although depression severity was measured in both groups, the severity of somatic symptoms was not assessed, which limits the inferences that can be drawn about the relation between somatic symptom severity and cognitive and emotion regulation. Finally, although most of the somatic patients in the present study would likely be diagnosed with somatic symptom disorder in the DSM-5

(American Psychiatric Association, 2013), replication with the updated version of the SCID would strengthen the clinical relevance of these results.

Conclusion

The present study provides preliminary evidence for the similar pattern of adaptive and maladaptive emotion regulation strategies usage in MDD and SD. Moreover, the current results suggest that positive reappraisal, refocus on planning, and positive refocusing distinguish patients with depression and somatization. Finally, the present study offers further empirical evidence for the underuse of adaptive emotion regulation in depression. As the present study was exploratory in nature, replication of these results is needed. Further research related to adaptive and maladaptive emotion regulation will contribute to theories of psychopathology and may enhance our understanding of the important cognitive and emotional processes to attend when treating these disorders.

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