

BRIEF REPORT

Enhancing attributional style as a resiliency factor in depressogenic stress generation

Evan M. Kleiman^{a*}, Richard T. Liu^b and John H. Riskind^a

^a*Department of Psychology, George Mason University, Fairfax, VA, USA;* ^b*Department of Psychiatry and Human Behavior, Butler Hospital, Brown University Alpert Medical School, Providence, RI, USA*

(Received 19 December 2011; final version received 9 April 2012)

There is a growing body of evidence that suggests depression and cognitive vulnerabilities to depression may lead individuals to generate stressful events. However, there has been no study to date that has directly examined factors that may lead individuals to be less likely to generate stressful events. The present study examines whether an enhancing attributional style, the tendency to make global and stable inferences following occurrence of a positive event, functions as a resiliency factor in stress generation. One hundred and sixty-seven female students completed measures of depression symptoms and attributional style at baseline and occurrence of life events since baseline at a four-week follow-up. Results indicated that an enhancing attributional style predicted decreased levels of stressful events over the following four weeks, even when controlling for depression symptoms. The findings of this study suggest that there may be resiliency factors that can help protect individuals from the generation of stressful events.

Keywords: cognitive vulnerabilities; stress generation; resiliency; enhancing attributional style; depression

Introduction

There has been considerable research over the past several decades showing depressed individuals experience more stressful events than non-depressed individuals (Hammen, 1991, 2005). Moreover, depressed individuals may behave in ways that generate stressful events that perpetuate or exacerbate their depression (for review see Liu & Alloy, 2010). Relative to non-depressed counterparts, these individuals tend to experience more events that are dependent on their behavior (e.g., a fight with a significant other), but not events that are independent of their behavior (e.g., death of a loved one). This *stress generation effect* (Hammen, 1991, 2005) has been primarily studied in relation to depression. However, more recent studies have examined cognitive vulnerabilities to depression as well. Several studies have found that adults and children who exhibit cognitive vulnerabilities to depression experience higher levels of dependent stressful events than do individuals without such vulnerabilities. Cognitive vulnerabilities that have been linked to stress

*Corresponding author. Email: ekleiman@gmu.edu

generation include hopelessness (Joiner, Wingate, Gencoz, & Gencoz, 2005), rumination (Kercher & Rapee, 2009), self-criticism (Shih, Abela, & Starrs, 2009), and of direct relevance to the present study, negative cognitive style (Safford, Alloy, Abramson, & Crossfield, 2007). Individuals with such vulnerabilities may behave in ways that generate future stressful events that are dependent on their behavior. For example, individuals with cognitive vulnerabilities to depression may have higher sensitivity to rejection (Hankin, Kassel, & Abela, 2005), which may act as a self-fulfilling prophesy for creating rejection experiences in relationships. Indeed, one study of romantic relationships found that cognitive vulnerability characterized by heightened sensitivity to rejection predicted greater relational conflict and relationship breakups (Downey, Freitas, Michaelis, & Khouri, 1998).

According to the hopelessness theory of depression (Abramson, Metalsky, & Alloy, 1989), individuals who infer global and stable causes and negative consequences after a negative event are more likely to become depressed (Alloy et al., 2000). As noted above, such individuals may generate the very life stressors that make them vulnerable to depression (Safford et al., 2007; Shih et al., 2009). Although, there has been considerable evidence for risk factors that predict greater self-generated stress, to our knowledge there is no study to date that examines factors that predict *decreased* stress generation. The present study will attempt to fill this gap by examining whether an enhancing attributional style (Needles & Abramson, 1990), where individuals form stable and global attributions to positive, rather than negative, events may be associated prospectively with lower rates of negative life events.

Individuals with an enhancing attributional style have been found to be more resilient to depression (Haefel & Vargas, 2011; Needles & Abramson, 1990). As Needles and Abramson (1990) postulated, individuals with an enhancing attributional style tend to see positive events that occur as having global and stable causes and the potential to lead to further positive events in the future. This attributional pattern leads to hopefulness which in turn reduces depression symptoms. The enhancing attributional style has never been examined in the context of stress generation. However, the logic could be extended where individuals with the enhancing attributional style may act in ways that increase hopefulness that not only reduces depression symptoms but also predicts less negative life events. Furthermore, just as negative attributional styles may be associated with greater stress generation, so may its counterpart, enhancing attributional styles, be associated with a reduction of self-generated life stress.

We hypothesize an enhancing attributional style will predict lower levels of dependent, but not independent, stressful events occurring over a four-week prospective period when controlling for initial symptoms of depression. Following the example of past studies (e.g., Eberhart & Hammen, 2009; Shih & Eberhart, 2008), the present study used a female-only sample because of past evidence that the stress generation effect may be relatively more specific to women than men. That is, some studies of both genders only find the stress generation effect in women (Safford et al., 2007). Thus, following the example of previous research, the present study will examine enhancing attributional style as a predictor of reduced stress generation in a sample of 167 women.

Method

Participants

A total of 167 female undergraduates (mean age = 20.50, SD = 4.10, range 17–50) were recruited for an Institutional Review Board (IRB)-approved online study. Approximately 58% of the sample was Caucasian, 17% Asian, 14% African-American, and 11% was another ethnicity. Initially, 286 participants completed the baseline measures, and the final sample of 167 from the original group completed follow-up measures as well (58%). A series of independent samples *t*-tests were conducted and no significant differences were found between attritors and completers on any of the baseline measures including enhancing attributional style ($t = -1.04$, $p = .300$), depression symptoms ($t = .79$, $p = .430$), baseline negative independent events ($t = .30$, $p = .838$), and baseline negative dependent events ($t = .298$, $p = .766$). It is likely that most attritors did not complete the study because they had fulfilled the course credit required for the semester.

Procedure

Participants were assessed at two time-points, separated by approximately four weeks. Participants completed their second time point an average of 25.57 days (SD = 4.60 days) after completion of their first time point. At the initial time-point (T1), they completed measures of current depression symptoms (Beck Depression Inventory-II, BDI-II), Cognitive Style Questionnaire (CSQ), and life events that occurred in the past six weeks (College Life Stress Inventory, CLSI). Four weeks after completing the initial time-point assessments (T2), participants completed a measure of life events (CLSI) that had occurred since T1.

Measures

Depression symptoms

The BDI-II (Beck, Steer, & Brown, 1996) is a 21-item self-report measure of current depression symptoms. The internal consistency was found to be excellent in the current sample ($\alpha = .92$).

Enhancing cognitive style

The CSQ (Haefel et al., 2008) assesses inferences for 12 hypothetical negative and positive events. Participants are asked to imagine themselves in a situation (“A person you’d really like to develop a close friendship with wants to be friends with you.”) and then write one cause for the event. Participants then rate the cause for this event based on stability and globality. We used a composite of all positive items to create an index of enhancing attributional style. The CSQ demonstrated good internal consistency for the stability ($\alpha = .84$), globality, ($\alpha = .84$), and overall composite scores ($\alpha = .85$).

Negative life events

The CLSI (Kohn, Lafreniere, & Gurevich, 1990) is a 75-item self-report measure of the occurrence of positive and negative life events relevant to college students. For the current study, the CLSI was used to assess the occurrence of life events for a six-week-period prior to T1 and again at T2 for events occurring in the four weeks since T1. The first and second authors individually rated each event as either negative or positive and dependent or independent, and discordant ratings were resolved by consensus between the raters. Excellent inter-rater reliability was found ($\kappa = .89$). Of the 75 items in the CLSI, 43 were coded as purely negative (e.g., death of a close friend) and 24 were purely positive (e.g., getting married). The valance of the remaining nine items from the total pool was unclear (e.g., changes in job situation could be due to getting fired or quitting for a higher paying job). Of the 43 negative events, 13 items were removed because they involved subjective experiences rather than the occurrence of actual events (e.g., concerns about appearance) or were too common in the sample (e.g., two exams in one day was endorsed by almost everyone). The final set of items consisted of 18 dependent events (e.g., “difficulties with a roommate”) and 12 independent events (e.g., “death of a close family member”). The number of items endorsed at T1 and T2 served as covariate and dependent variables, respectively.

Results

When examining missing data on all study variables, <1% of our data were missing. To determine if there was a pattern to the missing data, or if the was missing at random, Little’s test for missing completely at random (MCAR; Little, 1988) data was conducted. Since the chi-square value was not-significant [$\chi^2_{(df=876)} = 895.06$, $p = .32$], the data met the assumption for MCAR. Given that there was a relatively low amount of missing data and that missing data were determined to be MCAR, a single expectation maximization (EM) imputation is recommended (Scheffer, 2002). Missing data were imputed using the EM function in SPSS 20.0.

Table 1. Means, standard deviations, and intercorrelations of study variables.

	1	2	3	4	5	6
1. Depression symptoms (BDI)	–					
2. Enhancing attributional style (CSQ)	-.21*	–				
3. T1 negative dependent events (CLSI)	.23**	-.05	–			
4. T1 negative independent events (CLSI)	.03	.04	.36***	–		
5. T2 negative dependent events (CLSI)	.27***	-.25**	.54***	.23***	–	
6. T2 negative independent events (CLSI)	.10	-.03	.26***	.56***	.29***	–
Mean	7.56	5.48	1.28	1.02	1.36	1.37
SD	8.16	.68	1.26	1.22	1.27	1.27

BDI: Beck Depression Inventory; CSQ: scores for positive events on Cognitive Style Questionnaire; CLSI: events from College Life Stress Inventory.

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

Means, standard deviations, and intercorrelations among study variables are presented in Table 1. Depression symptoms were negatively correlated with enhancing attributional style and positively correlated with T1 negative dependent events and T2 negative dependent events. T1 negative dependent events correlated with T1 negative independent events, T2 negative dependent events, and T2 negative independent events. T2 negative dependent events correlated with enhancing attributional style, T1 negative independent events, and T2 negative independent events.

Since the amount of days between baseline and follow-up varied from participant to participant ($M = 25.57$ days, $SD = 4.60$ days), we conducted our analyses with length of follow-up as a covariate. We did this because the variation in length of time between baseline and follow-up may affect the number of prospective events reported. Table 2 presents the results of a hierarchical regression analysis in which T2 negative dependent events was regressed onto time between T1 and T2, T1 depression symptoms, and T1 negative dependent events (block 1) and T1 enhancing attributional style (block 2). Overall, block 1 accounted for 41% of the variance in T2 negative dependent events. T1 negative dependent events were significant ($b = .55$, $p < .001$) in this block. Enhancing attributional style had a significant negative relationship with T2 negative dependent events in block 2 ($b = -.12$, $p < .05$) and predicted an additional 1.5% of the variance. We conducted the same set of analyses using negative independent events instead of negative dependent events. Table 2 also shows that neither depression symptoms ($b = .01$, ns) nor enhancing attributional style ($b < .001$, ns) predicted T2 negative independent events.

Discussion

Although, prior research has demonstrated that negative cognitive factors related to depression predict increased occurrence of stressful events, the present study is the first to our knowledge to identify a cognitive factor that predicts decreased

Table 2. Results of hierarchical regression analyses predicting T2 negative dependent and independent events, controlling for depressive symptoms and respective T1 events.

	DV: T2 negative dependent events (CLSI)				DV: T2 negative independent events (CLSI)			
	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>
Step 1								
Time between baseline and follow-up	-.02	.14	-.15	.885	.81	.15	.54	.588
Depression symptoms (BDI)	.02	.03	.64	.526	.01	.03	.03	.978
T1 life events (CLSI)	.55	.06	9.79	.000	.54	.07	8.61	.000
Step 2								
Enhancing attributional style (CSQ)	-.12	.06	-2.05	.042	.03	.06	.41	.682

BDI: Beck Depression Inventory; CSQ: scores for positive events on Cognitive Style Questionnaire; T1 life events: dependent/independent life events respective to T2 events; CLSI: events from College Life Stress Inventory. Block 1 r^2 for dependent events = .414, $p < .001$; block 2 $\Delta r^2 = .015$, $p = .042$. Block 1 r^2 for independent events = .329, $p < .001$, block 2 = ns .

occurrence of such events. Specifically, whereas other studies have focused on the depressive negative cognitive style, we examined the enhancing attributional style. We hypothesized that an enhancing attributional style would predict decreased occurrence of negative dependent, but not independent, life events over a four-week follow-up period. Consistent with our hypothesis, the present study found that an enhancing attributional style predicted lower levels of dependent stressful events. Also as predicted, an enhancing attributional style did not predict independent stressful events.

These findings provide an initial step toward examining resiliency processes relevant to stress generation. Although low levels of self-esteem, coping, and social support have been studied as mediators of increased occurrence of stressful events (Davila, Bradbury, Cohan, & Tochluk, 1997), they can be seen as risk rather than resilience factors. Thus, the present study is the first to show a direct relationship between a “pure” resiliency factor and stress generation. Enhancing attributional style fits well as a resiliency factor within the context of stress generation research because of its similarity to the negative cognitive style, a well-documented risk factor for stress generation. The present study takes a step away from traditional stress generation research while still staying consistent with the original stress generation hypotheses.

The results of this study raise the question of how enhancing attributional style serves as a resiliency factor. It may be that enhancing attributional style reduces negative life events through decreases in depression symptoms. This may be so because the original applications of the theory (e.g., Needles & Abramson, 1990) found that enhancing attributional style decreases depression symptoms. The decreases in depression symptoms may in turn lead to decreased generation of negative events. Moreover, in a similar manner to the self-fulfilling prophecies that individuals with a negative cognitive style create, individuals with an enhancing attributional style may create positive self-fulfilling prophecies. For example, individuals with an enhancing attributional style may behave in ways characteristic of dispositionally optimistic individuals, that is, acting in a manner consistent with their expectations. Optimistic individuals may be more proactive in monitoring, and preventing or minimizing threats to their well-being because they are more confident in the likelihood of a positive outcome (Carver, Scheier, & Segerstrom, 2010). This may be particularly the case for individuals who have an attributional style characterized by expectations of stable and global positive outcomes. Optimistic individuals are also more socially agreeable (Carver, Kus, & Scheier, 1994). Such tendencies could result in reduced likelihood of self-generated negative events in interpersonal domains. Such behaviors have also been associated with a stronger social support system (Carver et al., 2010) and more experiences of social acceptance rather than rejection (Carver et al., 1994). Nevertheless, it would be important for future studies to examine the actual behavioral mechanisms underlying the reduced stress generation effect of an enhanced attributional style.

The present study had some notable strength. First, it was the first study to explicitly examine factors that relate to occurrence of lower levels of stressful events. Second, the study showed that these effects could be found in a relatively short period of time. Finally, the study had an ethnically diverse sample that may make results more generalizable. Several limitations must also be acknowledged. We used a female-only sample because past research (Eberhart & Hammen, 2009; Shih &

Eberhart, 2008) finds that females are more susceptible to negative events and thus more likely to generate stress. However, the exclusion of males makes the study less generalizable to both genders. Future studies could examine these resiliency effects in males as well. Another possible future direction could be to examine the findings of this study with a more frequent interval of reporting of life events. For example, a daily diary study would allow the examination of enhancing attributional style as a resiliency factor in stress generation at a much higher resolution. Another limitation of the present study is that it used a self-report measure of stressful events. Self-report measures of stressful events could be susceptible to respondents' interpretation (Liu & Alloy, 2010), especially if they are currently depressed. Future studies are needed that examine stress resiliency using an interview measure of stress.

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