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ORIGINAL ARTICLE

# Negative Life Events, Self-Perceived Competence, and Depressive Symptoms in Young Adults

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**Abstract** Despite consistent support for Cole's (1990, 1991) competency-based model of depression in children and adolescents, no studies have examined this model in adult samples and few have focused on congruence between domains of self-perceived competence and specific forms of negative life events. Addressing this gap in the current cross-sectional study, we found that forms of self-perceived competence may both moderate and partially mediate the link between negative events and young adults' current depressive symptoms. Specifically, there was evidence for both the partial mediating and moderating roles of perceived global self-worth and self-perceived scholastic competence. In contrast, perceived social acceptance and negative social events appeared to be independent correlates of depressive symptoms.

**Keywords** Depression · Self-perceived competence · Vulnerability-stress · Event congruency

## Introduction

According to cognitive theories of depression (e.g., Abramson, Seligman, & Teasdale, 1978; Abramson, Metalsky, & Alloy, 1989; Beck, 1967, 1987; Clark, Beck, & Alford, 1999), negative cognitive styles contribute risk to the development of depression following the occurrence of negative life events. The majority of these theories propose that negative cognitive styles moderate the relation between negative life events and depression. According to this vulnerability-stress hypothesis, individuals with a cognitive vulnerability to depression should be more likely to develop depression following the occurrence of negative life events than those without this vulnerability. Although a number of studies have supported this hypothesis, results have been more consistent in studies with adults than with children (for a review, see Gibb & Coles, 2005).

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In one of the few cognitive theories of depression developed specifically for youth, Cole and his colleagues (e.g., Cole, 1990, 1991; Cole, Martin, & Powers, 1997; Seroczynski, Cole, & Maxwell, 1997) suggested that low self-perceived competence is a vulnerability factor in the development of depressive symptoms in children and adolescents. Cole proposed that children and adolescents use events and information from their environments as they form self-perceptions of their competencies in different domains (e.g., scholastic and social). Negative life events may negatively affect the development of an individual's competency-beliefs in multiple domains, which in turn place the individual at a greater risk for developing depression. Thus, in contrast to the typical vulnerability-stress models of depression (e.g., Abramson et al., 1989; Clark et al., 1999), Cole and his colleagues proposed a model in which self-perceived competence mediates (rather than moderates) the link between negative life events and depression among children and adolescents.

Self-perceived competence is operationalized in terms of two main components: (1) self-evaluative thoughts regarding one's abilities in specific domains of competence, and (2) one's general sense of self-worth (Cole et al., 2001; Harter, 1982, 1999, 2003). A person can have a relatively positive sense of overall self-worth, but he or she might maintain very negative self-beliefs in one specific domain of competency. Therefore, rather than simply being the summation of levels of self-concept in each specific domain, global self-concept is more accurately assessed by specifically tapping one's overall sense of self-worth (Harter, 1982). Studies have supported this view that self-perceived competence is multidimensional and that self-evaluations vary across different domains (Harter, 1982, 1990, 1993, 1999, 2003; Seroczynski et al., 1997).

Studies have suggested that beliefs about one's competencies and abilities develop through childhood and into late adolescence, and are fundamental to one's ability to function and cope in daily life (e.g., Cole et al., 2001). In addition, there is evidence that self-perceived competence becomes increasingly stable over the course of development, and that by middle to late adolescence, a stable system of self competency-beliefs emerges (Cole et al., 2001; Harter, 1999, 2003; Turner & Cole, 1994). Multiple factors, including negative life experiences, may contribute to negative self-perceptions of competence, and thus increase one's risk for depression (Cole et al., 2001; Cole & Turner, 1993; Tram & Cole, 2000).

As noted above, Cole (1990, 1991) has proposed a mediational model in which negative events contribute to the development of depression by means of their effect on an individual's self-perceived competence in various domains. That is, Cole has hypothesized that among children, negative events contribute to the development of low self-perceived competence, which then contributes vulnerability to the development of depressive symptoms. Examining depression through a mediational model (as opposed to a moderational model) may be more useful with children and adolescents because cognitive styles may not be a well-developed, stable characteristic in children (Cole et al., 1997; Cole & Turner, 1993; Gibb & Alloy, 2006; Tram & Cole, 2000; Turner & Cole, 1994). Therefore, rather than cognitive styles being a trait-like construct that contributes to the development of depressive symptoms in the presence of negative events, negative life events may actually contribute to the development of negative cognitive styles in children.

A number of studies have supported Cole's mediation hypothesis for self-perceived competence. For example, in a longitudinal study, Tram and Cole (2000) found that self-perceived competence partially mediated the relation between negative life events and depressive symptoms in adolescents. Other studies have also suggested that cognitive

styles fully or partially mediate the link between negative life events and depressive symptoms in both children and young adolescents (e.g., Cole & Turner, 1993; Seroczynski et al., 1997). In contrast, little support has been found for a moderational model with self-perceived competence in children and adolescents (Cole & Turner, 1993; Jacquez, Cole, & Searle, 2004; Seroczynski et al., 1997; Tram & Cole, 2000; Turner & Cole, 1994; but see also Hilsman & Garber, 1995).

Despite consistent support for Cole's (1990, 1991) model in children and adolescents, no studies have yet examined it in samples of adults. Therefore, although Cole and his colleagues (Cole et al., 2001; Cole & Turner, 1993; Tram & Cole, 2000; Turner & Cole, 1994) have suggested that self-perceived competence should shift from a role of mediating to one of moderating the relation between negative life events and depression as children age into adulthood, no study has yet tested this hypothesis. The primary aim of this study, therefore, was to examine the relations among self-perceived competence, negative life events, and depressive symptoms in young adults. We hypothesized that self-perceived competence would moderate, rather than mediate, the link between negative events and depressive symptoms in young adults.

In testing mediation versus moderation, we examined participants' levels of global self-worth as well as self-perceived competence in the academic and social domains. According to Beck's (Beck, 1983, 1987; Clark et al., 1999) event congruency hypothesis, negative events specific to the domain of cognitive vulnerability should be more likely to contribute to the development of depressive symptoms than are events in domains not specific to the vulnerability. Therefore, when testing models with perceived academic and social competence, we focused specifically on negative academic and social events, respectively. In terms of these analyses, we predicted that the strongest support for the vulnerability-stress hypotheses would be obtained in conditions in which there was a match between the specific vulnerability (i.e., domain of self-perceived competence) and negative life events. At the outset, it should be noted that this study is cross-sectional in design. Therefore, we did not examine changes in any of the variables over time. However, this is the first examination of Cole's (1990, 1991) competency-based model of depression in young adults and, as such, it is useful for the initial evaluation of the theory.

## Method

### Participants

Participants for the present study included 300 undergraduate students. The mean age of participants was 19.4 years ($SD$ = 2.5) and 190 (63.3%) were female. In terms of racial/ethnic composition, 183 (61.0%) were Caucasian, 61 (20.3%) were Asian/Asian American, 21 (7.0%) were Latino/a, 13 (4.3%) were African American, and the remaining 21 (7.0%) were from other racial/ethnic groups or were of mixed race/ethnicity.

### Measures

#### *Self-perceived competence*

The Self-Perception Profile for College Students (SPPCS; J. Neemann & S.Harter, 1986, Unpublished data.) was used to assess participants' perceived competence in a variety of

domains. The SPPCS consists of 54 items, each scored on a 4-point Likert-type scale with higher scores reflecting greater self-perceived competence. For each item, participants are asked whether they are like some students who are good at a particular activity or like others who are not good at the activity. They then rate whether the chosen statement is ''really like me'' or ''sort of like me.'' The SPPCS contains thirteen subscales: a global self-worth scale, and twelve domain-specific competence scales. Studies have supported the reliability and validity of the SPPCS subscales (see J. Neemann & S.Harter, 1986, Unpublished data.). The current study focused on the global self-worth subscale (SPPCS-GSW) and two of the SPPCS subscales: scholastic competence (SPPCS-SC) and social acceptance (SPPCS-SA). These two subscales were chosen because parallel scales from the Self-Perception Profile for Children have been consistently examined in relation to negative events and depressive symptoms in previous research (Cole et al., 1997; Cole et al., 2001; Jacquez et al., 2004; Seroczynski et al., 1997; Tram & Cole, 2000). All subscales of the SPPCS exhibited adequate internal consistency. Coefficient alphas for each subscale are as follows: SPPCS-GSW $\alpha$ = .89, SPPCS-SC $\alpha$ = .73, SPPCS-SA $\alpha$ = .85.

*Life events*

The Life Experiences Survey (LES; Sarason, Johnson, & Seigel, 1978) was used to assess negative life events. In this 60-item survey each item consists of a statement referring to a life event (e.g., Marriage, Death of a close friend, Failing a course), and participants are asked to indicate whether the event occurred in the previous six months and the degree of positive or negative impact the event had. Studies have supported the reliability and validity of the LES (e.g., Sarason et al., 1978). In the current study, levels of negative life events were calculated by summing the number of events endorsed as having a negative impact. For the current study, the LES (total score) exhibited adequate internal consistency ($\alpha$ = .74). For the purpose of testing the event-congruency hypothesis, the LES items were broken down into two main categories: Academic events (LES-A) and social events (LES-S). LES-A was made up of the nine items from the school-related events section of the LES. The LES-S subscale was formed by summing the 37 LES items judged by at least 8 of 10 independent raters as being interpersonal/social in nature.[1] For the current study, the internal consistency ($\alpha$) for LES-A and LES-S was = .42 and .54, respectively.

*Depressive symptoms*

The Beck Depression Inventory-II (BDI-II; Beck, Steer, & Brown, 1996) was used to assess depressive symptoms. The BDI-II is a 21-item self-report scale assessing the presence and severity of depressive symptoms over the past two weeks. Total scores range from 0–63, with higher scores indicating more severe symptoms of depression. Several studies have supported the validity and reliability of the BDI-II (Beck et al., 1996; Beck, Steer, & Garbin, 1988; Storch, Roberti, & Roth, 2004; Whisman, Perez, & Ramel, 2000). Specifically, examining the validity of the BDI-II, studies have found consistent support for two underlying factors measuring cognitive-affective symptoms and somatic symptoms of depression (Beck et al., 1996; Storch et al., 2004; Whisman et al., 2000). In addition, studies have found evidence for the internal consistency of the

[1] The specific items composing these subscales can be obtained from the author.

BDI-II with coefficient alphas ranging from .89 to .90 (Storch et al., 2004; Whisman et al., 2000). For the current study, the BDI-II exhibited excellent internal consistency ($\alpha = .93$).

### Procedure

Participants completed the questionnaires in large groups. Students received course credit for their participation.

## Results

Preliminary analyses revealed that a number of variables exhibited significant skew. These variables were transformed (e.g., square root, inverse) prior to analysis to satisfy assumptions of normality. Intercorrelations and descriptive statistics for all variables are shown in Table 1. Means, standard deviations, and ranges represent values obtained prior to transformations. Next, we examined whether there were any gender differences in any of the variables. There were no significant gender differences on any of the variables, and gender did not moderate any of the relations among negative events, perceived competence, and depressive symptoms (lowest $p = .20$).

### Tests for mediation

For the primary hypothesis, mediation analyses were conducted following the recommendations of Baron and Kenny (1986). As a first step in the tests of mediation, correlations among all the variables to be included in the analyses were examined to determine whether they were significantly related to one another. As can be seen in Table 1, each measure of negative event (i.e., LES, LES-A, and LES-S) was significantly correlated with BDI-II scores. In addition, each type of perceived competence (i.e., SPPCS-GSW, SPPCS-SC and SPPCS-SA) was significantly correlated with BDI-II scores. In terms of the specific correlations between the measures of negative events and domains of perceived competence needed for mediation, LES was significantly

**Table 1** Correlations and descriptive statistics for study variables

| | 1 | 2 | 3 | 4 | 5 | 6 | *M* | *SD* | Range |
|---|---|---|---|---|---|---|---|---|---|
| 1. SPP-GSW | – | | | | | | 2.94 | 0.70 | 1–4 |
| 2. SPP-SC | .42** | – | | | | | 2.71 | 0.63 | 1–4 |
| 3. SPP-SA | .66** | .26** | – | | | | 2.85 | 0.82 | 1–4 |
| 4. LES | –.17** | –.18** | –.04 | – | | | 3.22 | 3.21 | 0–21 |
| 5. LES-A | –.12* | –.24** | .02 | .63** | – | | 0.73 | 0.97 | 0–5 |
| 6. LES-S | –.06 | .04 | .05 | .68** | .27** | – | 1.00 | 1.39 | 0–9 |
| 7. BDI-II | –.57** | –.42** | –.31** | .40** | .24** | .23** | 10.14 | 9.57 | 0–46 |

*Note*: SPP-GSW = Global self-worth subscale of the Self-Perception Profile for College Students; SPP-SC = Scholastic competence subscale of the Self-Perception Profile for College Students; SPP-SA = Social acceptance subscale of the Self-Perception Profile for College Students; LES = Life Experiences Survey total number of events experienced negative; LES-A = Academic events of the Life Experiences Survey experienced negative; LES-S = Social events of the Life Experiences Survey experienced negative; BDI-II = Beck Depression Inventory-II.

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

correlated with SPPCS-GSW and LES-A was significantly correlated with SPPCS-SC. In contrast, the correlation between LES-S and SPPCS-SA was not significant. Given this, tests of mediation focused on SPPCS-GSW and SPPCS-SC.

First, we examined whether levels of global self-worth mediated the relation between general negative events and symptoms of depression. Using BDI-II scores as the criterion variable, LES was entered in the first block of a hierarchical regression and was significant, $t(298) = 7.59$, $p < .001$, $\beta = .40$. When SPPCS-GSW was entered in the second block, it was significant $t(297) = -11.53$, $p < .001$, $\beta = -.52$. Although LES remained significantly related to BDI-II scores when SPPCS-GSW was added, $t(296) = 7.00$, $p < .001$, $\beta = .31$, the indirect effect from LES through SPPCS-GSW to BDI-II was significant, $z = 2.84$, $p = .002$ (Sobel, 1982), suggesting that SPPCS-GSW partially mediated the relation between general negative events and depressive symptoms.

Next, we examined whether self-perceived scholastic competence mediated the relation between negative academic events and symptoms of depression. As before, using BDI-II scores as the criterion variable, LES-A was entered in the first block of a hierarchical regression and was significant, $t(298) = 4.12$, $p < .001$, $\beta = .23$. When SPPCS-SC was entered in the second block it was significant, $t(297) = -7.08$, $p < .001$, $\beta = -.38$. Although LES-A remained significantly related to BDI-II scores, $t(297) = 2.60$, $p = .01$, $\beta = .14$, the indirect effect of academic events through SPPCS-SC to BDI-II scores was significant, $z = 3.38$, $p < .001$, suggesting that self-perceived scholastic competence partially mediated the relation between negative academic events and symptoms of depression.

## Tests for moderation

Next, we tested the hypothesis that levels of self-perceived competence would moderate the relation between negative life events and symptoms of depression. Following the suggestions of Aiken and West (1991), all predictor variables were mean centered to reduce multicollinearity prior to analysis. For the five hierarchical linear regression analyses conducted, BDI-II scores served as the criterion variable.

First, we examined whether levels of global self-worth moderated the link between general negative events and symptoms of depression. LES and SPPCS-GSW were entered in the first block, and both were significantly related to BDI-II scores, $t(298) = 7.59$, $p < .001$, $\beta = .40$, and, $t(297) = -11.53$, $p < .001$, $\beta = -.52$, respectively. The LES × SPPCS-GSW interaction was entered in the second block and was also significant, $t(296) = -2.41$, $p = .02$, $\beta = -.11$. Exploring the form of this interaction, we found that negative events were significantly more strongly related to depressive symptoms among individuals with low, $t(296) = 7.07$, $p < .001$, $\beta = .40$, than high, $t(296) = 3.07$, $p = .002$, $\beta = .20$, self-perceived global self-worth (see Fig. 1). Next, we examined whether levels of perceived scholastic competence moderated the relation between negative academic events and symptoms of depression. LES-A and SPPCS-SC were entered in the first block, and both were significantly related to BDI-II scores, $t(297) = 2.60$, $p = .01$, $\beta = .14$, and, $t(297) = -7.08$, $p < .001$, $\beta = -.38$, respectively. The LES-A × SPPCS-SC interaction was entered in the second block and was also significant, $t(296) = -2.50$, $p = .01$, $\beta = -.34$. For this interaction, we found that academic events were significantly more strongly related to symptoms of depression among individuals with low, $t(296) = 3.75$, $p < .001$, $\beta = .27$, than high $t(296) = .02$, $p = .99$, $\beta = .001$, self-perceived scholastic competence (see Fig. 2).

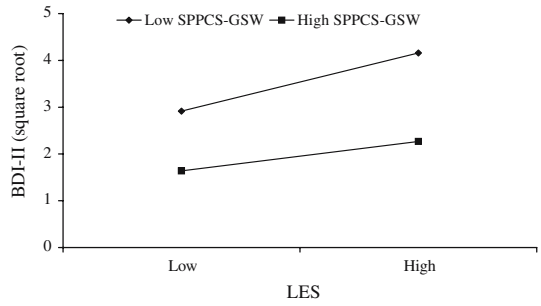


**Fig. 1** Moderation model with global self-worth. SPPCS-GSW = Global self-worth subscale of the Self-Perception Profile for College Students; LES = Life Experiences Survey; BDI-II = Beck Depression Inventory-II

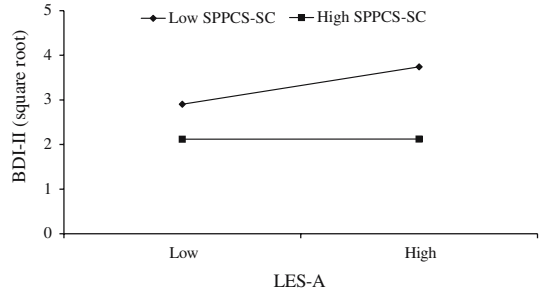


**Fig. 2** Moderation model with self-perceived scholastic competence. SPPCS-SC = Scholastic competence subscale of the Self-Perception Profile for College Students; LES-A = Academic events of the Life Experiences Survey; BDI-II = Beck Depression Inventory-II

For the third moderation analysis, we tested whether levels of perceived social acceptance moderated the link between negative social events and symptoms of depression. LES-S and SPPCS-SA were entered in the first block of a regression and both were significantly related to BDI-II scores, $t(297) = 4.87$, $p < .001$, $\beta = .26$, and, $t(297) = -5.97$, $p < .001$, $\beta = -.32$, respectively. The interaction between LES-S and SPPCS-SA was entered in the second block, but was not significant, $t(296) = -1.29$, $p = .20$, $\beta = -.07$.

Finally, to evaluate the specificity of the hypothesized vulnerability-stress models, we examined the vulnerability event-incongruent interactions. Specifically, we tested whether scholastic competence moderated the link between social events and depressive symptoms and whether social acceptance moderated the link between academic events and depressive symptoms. Consistent with hypotheses, neither of these interactions was significant (both $p$s $> .10$).

## Discussion

The primary goal of this study was to examine the relations among self-perceived competence, negative life events, and depressive symptoms in young adults. Supporting Cole's hypotheses (Cole et al., 2001; Cole & Turner, 1993; Tram & Cole, 2000; Turner & Cole, 1994), we found support for the moderating roles of global self-worth and

scholastic competence. Specifically, the relation between negative events and depressive symptoms was stronger among young adults with lower, compared to higher, levels of global self-worth. Similarly, the relation between negative academic events and depressive symptoms was stronger among young adults with lower, compared to higher, levels of perceived scholastic competence. However, we also found that both global self-worth and scholastic competence partially mediated the link between negative events (overall negative events and academic events, respectively) and depressive symptoms. Thus, in the current sample of college students, both the (partial) mediating and moderating role of global self-worth were supported in the link between general negative events and depressive symptoms. Similarly, both the (partial) mediating and moderating role of perceived scholastic competence were supported in the link between negative academic events and symptoms of depression. We should note that although global self-worth and scholastic competence were significantly correlated in this study, global self-worth was significantly more strongly correlated with social acceptance ($z = 4.45, p < .001$), suggesting that the similarity in findings for global self-worth and academic competence was not due simply to their strong interrelationship.

Although, given the cross-sectional design of the current study, conclusions regarding development must remain tentative, it may be that even though levels of global self-worth and perceived scholastic competence become more stable as children age into adulthood as is proposed in Cole's (1990, 1991) theory, these self-perceptions might still be changing in young adults as a result of negative experiences. That is, although levels of self-perceived competence might shift from a role of mediating to one of moderating the relation between negative life events and symptoms of depression as children age into adulthood, self-perceived competence might still be developing in the early adulthood years. Another possibility is that global self-worth and perceived scholastic competence do become relatively stable during adolescence, but that major transitions such as starting college could contribute to significant changes in these self-perceptions, at least for some students.

Specifically regarding the findings with scholastic competence, it is possible that scholastic performance is highly important for individuals in their beginning years of college, and therefore negative academic events play a role in forming one's level of self-perceived scholastic competence during this particularly sensitive developmental stage. Perhaps, consistent with Cole's (1990, 1991) competency-based model of depression, college students internalize the competency-related feedback they receive, which modifies their beliefs about their own abilities within the academic domain. Thus, in this group, self-perceived academic competence may not only change as a result of negative academic events, but also moderate the likelihood that these events will contribute to future increases in depressive symptoms. Certainly causality cannot be assumed, and future longitudinal studies are needed to clarify the mediational role of scholastic competence at this developmental period.

In contrast to the relations observed for global self-worth and academic competence, the vulnerability-event congruent interaction between negative social events and self-perceived social acceptance was not significantly related to depressive symptoms. The reason for the nonsignificant moderation effect is unclear. It may mean that the events assessed by our measure of negative life events did not significantly activate the domain of self-perceived social acceptance. It is possible that a different measure of negative social events developed specifically for this population would provide stronger support for this moderation model. Although future longitudinal research is needed to identify

the direction of the relation between self-perceived competence and depressive symptoms, these findings suggest that self-competency beliefs, particularly global self-worth and scholastic competence, may be important cognitive factors in relation to depressive symptoms in young adulthood. To examine this possibility and to explore further the role of these domains of self-perceived competence in adults, multi-wave longitudinal studies are needed that follow high-school students as they transition into college.

Given the cross-sectional design of this study, it was not possible to examine changes in any of the variables over time or make any conclusions regarding causal relations among the variables. However, this is the first examination of Cole's (1990, 1991) competency-based model of depression in young adults and, as such, it provides preliminary support for the link between domains of perceived competence and levels of depressive symptoms in young adults. In addition, the current results provide preliminary support for the hypothesis that perceived competence may shift to a role of moderating the link between negative events and depressive symptoms in adulthood. Future longitudinal prospective studies are needed to identify causal pathways in the relations between domains of self-perceived competence, specific negative life events, and depressive symptoms.

In addition to its cross-sectional design, the study had other limitations as well. First, all measures relied on individuals' self-report. Responses to self-report measures might be biased by mood states; that is, depressed individuals might be more likely to respond negatively on all measures. This study attempted to minimize the negative response bias in the assessment of negative events by focusing on the number of negative events reported, rather than the subjective impact ratings of each negative event. This said, however, future studies should seek to include multi-method assessments of these constructs (e.g., questionnaire and interview-based assessments). A third limitation of this study was that the sample of the current study was limited to undergraduates. Thus, it is not clear whether the current results will generalize to other samples. Indeed, we would hypothesize that some of the results (e.g., partial mediation results for scholastic competence) may be specific to young adults entering college. This said, future studies examining Cole's (1990, 1991) developmental model would ideally follow children as they age into young adulthood. A major challenge in this area of research is to determine whether the relations among these variables change from one developmental period to the next. Identifying the relations among these variables will likely not only lead to the development of individualized treatment programs for individuals with specific vulnerabilities, but also pinpoint critical periods of vulnerability, providing direction for more targeted prevention programs.

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