

Optimistic Explanatory Style as a Moderator of the Association Between Negative Life Events and Suicide Ideation

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Abstract. *Background:* Individuals experiencing negative and potentially traumatic life events are at increased risk for suicidal thoughts and behaviors; however, suicidal outcomes are not inevitable. Individuals who attribute negative life events to external, transient, and specific factors, rather than internal, stable, and global self-characteristics, may experience fewer deleterious outcomes, including suicidal behavior. *Aims:* This study examines the moderating effect of explanatory style on the relationship between negative life experiences and suicide ideation in a college student sample. *Methods:* A total of 138 participants (73% female) were recruited from a rural, Eastern college and completed a self-report psychosocial assessment. *Results:* Optimistic explanatory style mitigates the influence of negative and potentially traumatic life events on thoughts of suicide, above and beyond the effects of hopelessness and depression. *Conclusions:* Beliefs about the origin, pervasiveness, and potential recurrence of a negative life event may affect psychological outcomes. Optimistic explanatory style was associated with reduced suicide ideation, whereas pessimistic explanatory style was associated with increased thoughts of suicide. Optimistic reframing of negative life events for clients may have treatment implications for the prevention of suicidal activity.

Keywords: optimistic explanatory style, suicide ideation and attempts, negative life events

Suicide is a leading cause of death during late adolescence and early adulthood (National Center for Health Statistics, 2004), and of years of potential life lost before age 65 (National Center for Injury Prevention and Control, 2005), making it a critical public health problem among young people (US Public Health Service, 1999). Individuals who experience negative or potentially traumatic life events appear to be at greater risk for suicide ideation (Dube et al., 2001; Kaplan, Pelcovitz, Salzinger, Mandel, & Weiner, 1997). Increased vulnerability for the development of suicidal thoughts may be a result of the influence of negative and chronic stressful events on social, emotional, and cognitive development (Sulik & Garfinkel, 1992). Individuals experiencing stressful and negative life events may also be unable to positively reframe or reappraise their negative life experiences (Carver, Pozo, Harris, Noriega, Scheier et al., 1993), resulting in hopelessness, depressive symptoms,

and suicidal activity. Such effects, however, may not be inevitable, and it is important to examine variables that might have a buffering effect on the impact of negative life events.

Research on negative and potentially traumatic life events has historically focused on resultant poor outcomes, with less emphasis placed on characteristics that might protect against psychopathology or poor functioning (Violanti, 2001). For some individuals who experience trauma, psychopathology may not develop because of their use of salubrious coping processes (Irwin, 1999; Tedeschi & Calhoun, 1996). With regard to suicide, the ability to defend against the manifestation of suicidal thoughts and behaviors may be partially the result of adaptive cognitive and emotional characteristics, such as an optimistic explanatory style, dispositional optimism, or future orientation (Hirsch & Conner, 2006; Hirsch et al., 2006; Scheier, Carv-

er, & Bridges, 2001). Optimistic explanatory style is defined as a tendency to make attributions about prior negative events that are external, specific, and transient (Gillham, Shatte, Reivich, & Seligman, 2001), rather than making internal, global, and stable attributions, which is considered a pessimistic explanatory style. Optimistic explanatory style is associated with good health and longevity (Peterson, Seligman, & Vaillant, 1988), effective problem solving (Shatte, Gillham, & Reivich, 2000; Stark & Boswell, 2000), decreased depression (Gillham et al., 2001; Seligman, Abramson, Semmel, & Von Baeyer, 1984), and faster recovery from depression (Seligman, Castellon, Cacciola, Schulman, Luborsky et al., 1988). Such benefits may occur via the use of active and adaptive coping strategies, a direct approach to solving problems, a belief in the attainability of future goals, and striving to overcome adversity (Miller, Manne, Taylor, Keates, & Dougherty, 1996; Puskar, Sereika, Lamb, Tusaie-Mumford, & McGuinness, 1999; Scheier & Carver, 1993; Scheier et al., 2001).

These findings reveal a trend toward better outcomes for optimists than pessimists across many situations; however, no studies specifically investigating optimistic explanatory style as a moderator of negative and potentially traumatic life events and suicide ideation were found in a review of the literature. This study examines the relationship between lifetime history of negative life events and suicide ideation in a college student sample and tests a moderator model of explanatory style as a buffering variable. It is hypothesized that optimistic explanatory style will moderate the influence of negative life events on suicide ideation after controlling for covariates.

Methods

Participants

Participants were 138 volunteers (100 females, 73%) recruited from a rural, Eastern state college. A power analysis was conducted to determine the number of participants needed to achieve 80% power to detect a significant effect ($p < .01$), given the standard deviation of predictor variables ($x_{\text{mean}} = 5$) and correlation of residuals ($r = .30$), resulting in a necessary sample of 122 subjects. Parameter estimates were based on our previous research with college students (Hirsch & Conner, 2006). Informed consent was obtained. Participants ranged from 18–57 years old ($x_{\text{mean}} = 22.5$; median = 21; $SD = 6.10$). The sample was primarily white (79%), although several ethnic groups were represented, including black (4.5%), Native American (1.3%), Hispanic/Latin American (1.3%), and Asian (1%).

Measures

Expanded Attributional Style Questionnaire (EASQ; Peterson & Villanova, 1988)

The EASQ is a 120-item questionnaire involving 24 scenarios of negative events that assess attributional style. Respondents are given a brief scenario (e.g., “You lose your job”) and are asked to describe why this event happened to them. Respondents rate each scenario on scales of internality, globality, stability, and importance. The EASQ predicted depression in college students and outpatients (Luten, Ralph, & Mineka, 1997). This measure exhibits adequate internal consistency (Reivich, 1995); in the current study, Cronbach’s $\alpha = .91$.

Lifetime Incidence of Traumatic Events (LITE; Greenwald & Rubin, 1999)

The LITE-Student form is a 16-item self-report checklist designed to measure the occurrence and emotional impact of traumatic events. The 16 items cover a broad range of potential trauma and loss events, including emotional, physical, and sexual abuse, and neglect, and ask for an estimate of emotional impact at both the time of occurrence and the present. The LITE has been used to assess traumatic events in older adolescents and their parents and has been shown to correlate positively with assessments of PTSD symptoms (Greenwald & Rubin, 1999). The authors report good to excellent test-retest reliability and adequate criterion validity against a structured interview (Greenwald & Rubin, 1999).

Beck Depression Inventory-II (BDI-II; Beck, Steer, & Brown, 1996)

The BDI-II is a 21-item self-report measure of the presence and severity of cognitive, affective, somatic, and motivational symptoms of depression. The BDI-II predicted depression in a clinical college sample (Beck et al., 1996) and has exhibited adequate test-retest reliability (.93; Beck et al., 1996). In the current study, Cronbach’s α for the BDI-II = .92.

Beck Hopelessness Scale (BHS; Beck, Weissman, Lester, & Trexler, 1974)

This scale assesses level of hopelessness via 20 true-false statements. The scale has adequate internal reliability (KR20 coefficient = .93), and test-retest reliability of .69 over 1 week and .66 over 6 weeks for patients with mixed diagnoses. The BHS predicted suicide ideation (Bonner & Rich, 1987), suicide attempts (Minkoff, Bergman, & Beck, 1973) and suicide completion in psychiatric outpatients (Beck, Brown, Berchick, Stewart, & Steer, 1990) and inpa-

Table 1: Bivariate correlations of study variables

	Gender	Depressive symptoms	Hopelessness	Optimistic explanatory style	Negative life events	Suicide ideation
Age	-.01	-.09	-.08	.08	.35**	.15
Gender	-	.15	.07	.00	-.04	.01
Depressive symptoms	-	-	.72**	-.48**	.21*	.53**
Hopelessness	-	-	-	-.45**	.02	.56**
Optimistic explanatory style	-	-	-	-	-.08	-.47**
Negative life events	-	-	-	-	-	.26**

Note: Depressive symptoms = Beck Depression Inventory – Second Edition; Hopelessness = Beck Hopelessness Scale; Optimistic explanatory style = Expanded Attributional Style Questionnaire; Negative life events = Lifetime Incidence of Traumatic Events; Suicide ideation = Beck Scale of Suicide Ideation (BSS). Note: * = $p < .05$; ** = $p < .01$

tients (Keller & Wolfersdorf, 1993), and differentiated between suicide attempters and completers (Beck, Steer, Kovacs, & Garrison, 1985). In the current study, Cronbach’s $\alpha = .87$.

Beck Scale for Suicide Ideation (BSS; Beck, Kovacs, & Weissman, 1979)

The BSS is a 21-item self-report assessment of thoughts, attitudes, and intentions regarding suicide. The BSS has adequate internal consistency (coefficient $\alpha = .90$, outpatient sample $\alpha = .87$), demonstrates high face, convergent, and construct validity (Beck et al., 1979), exhibits adequate test-retest reliability (Beck & Steer, 1991), and predicted suicidal ideation in university students (Miller, Segal & Coolidge, 2001). In the current study, Cronbach’s $\alpha = .83$.

Statistical Analyses

Independence of study variables was assessed using two-tailed bivariate correlation analyses (see Table 1). Hierarchical, multiple linear regressions were utilized to conduct moderator analyses predicting suicide ideation, scored as a continuous measure, according to accepted guidelines (Baron & Kenny, 1986); variables and covariates were entered on the first step, and the interaction term was entered on the second step. By design, all analyses controlled for depressive symptoms (BDI-II), hopelessness (BHS), age, and gender (females are the reference group); however, we also ran these analyses without controlling for depression and hopelessness, and report these results. Predictor variables of optimistic explanatory style and negative life events were centered prior to analyses to reduce multicollinearity occurring as a result of the moderator interaction (Aiken & West, 1991). To illustrate the moderator interaction, participants were categorized into high (pessimistic), medium, and low (optimistic) explanatory style groups using the mean score and cutoffs either one standard deviation above or below the mean.

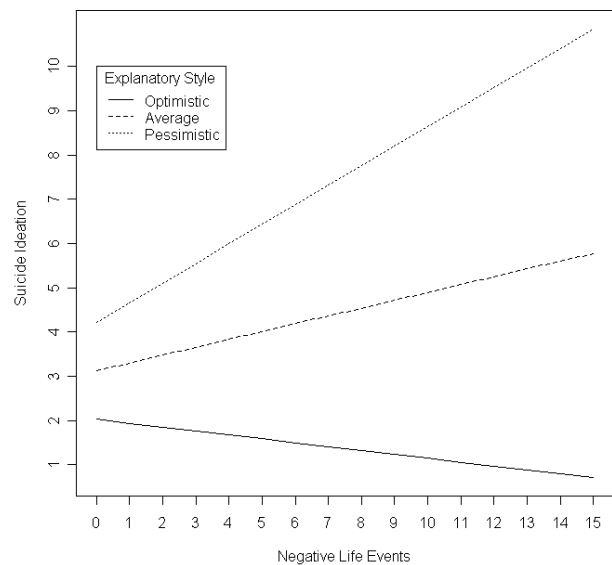


Figure 1: Linear regression – plot of interaction between explanatory style and negative life events for suicide ideation. Note: Optimistic explanatory style = Expanded Attributional Style Questionnaire; Negative life events = Lifetime Incidence of Traumatic Events; Suicide ideation = Beck Scale of Suicide Ideation (BSS).

Results

Forty-three percent of the sample ($n = 59$) had experienced at least one traumatic experience in their lifetime, with a mean occurrence of six traumatic life events (see Table 1). Slightly over 10% of the sample ($n = 14$) had made a previous suicide attempt, and 85% ($n = 115$) endorsed past suicide ideation. Bivariate correlations indicated that negative life events were significantly positively associated with depression (.21, $p < .05$) and suicide ideation (.26, $p < .01$). Optimistic explanatory style was significantly negatively associated with hopelessness (-.45; $p < .01$), depressive symptoms (-.48; $p < .01$), and suicide ideation (-.47; $p < .01$) (see Table 1).

An uncontrolled moderator model predicting the influence

Table 2: Explanatory style, negative life events and suicide ideation – multivariate linear regression

	Model I – uncontrolled analysis				Model II – controlled analysis				
	T-Value	Un. β (SE)	β	CI (95%)	T-Value	Un. β (SE)	β	CI (95%)	
Step one					Step one				
Constant	0.86	1.15 (1.33)	0.00	-1.48, 3.78	Constant	-0.91	-1.15 (1.27)	0.00	-3.67, 1.36
Age	1.60	0.09 (0.05)	0.13	-0.02, 0.19	Age	2.25*	0.11 (.04)	0.16	0.01, 0.20
Gender	0.23	0.16 (0.68)	0.02	-1.19, 1.50	Gender	-0.44	-0.27 (.61)	-0.03	-1.48, 0.94
Life events	2.14*	0.26 (0.12)	0.17	0.01, 0.50	Life Events	1.90	0.22 (.11)	0.13	-0.03, 0.14
Optimism	6.25***	3.85 (0.61)	0.47	2.63, 5.06	Optimism	3.25**	2.04 (.62)	0.36	0.17, 0.58
					Depressive symptoms	1.25	0.05 (.04)	0.14	-0.00, 0.44
					Hopelessness	3.67***	0.38 (.10)	0.25	0.79, 3.27
Step two					Step two				
Constant	0.68	0.90 (1.30)	0.00	-1.69, 3.48	Constant	-1.00	-1.26 (1.25)	0.00	-3.74, 1.23
Age	1.53	0.08 (0.05)	0.12	-0.02, 0.18	Age	2.18*	0.10 (.04)	0.15	0.00, 0.19
Gender	0.81	0.56 (0.68)	0.06	-0.80, 1.91	Gender	0.07	0.04 (.62)	0.00	-1.19, 1.27
Life events	1.70	0.21 (0.12)	0.14	-0.03, 0.44	Life events	1.55	0.18 (.11)	0.12	-0.04, 0.40
Optimism	6.59***	3.99 (0.60)	0.49	2.79, 5.18	Optimism	3.54***	2.21 (.62)	0.27	0.97, 3.44
Optimism \times Life events interaction	2.54*	0.72 (0.28)	0.19	0.15, 1.28	Optimism \times Life events interaction	2.09*	0.53 (.25)	0.14	0.02, 1.04
					Depressive symptoms	1.24	0.05 (.04)	0.13	-0.03, 0.13
					Hopelessness	3.52***	0.36 (.10)	0.35	0.15, 0.56

Note: Controlled analyses covary depressive symptoms and hopelessness. Depressive symptoms = Beck Depression Inventory – Second Edition; Hopelessness = Beck Hopelessness Scale; Optimistic explanatory style = Expanded Attributional Style Questionnaire; Negative life events = Lifetime Incidence of Traumatic Events; Suicide ideation = Beck Scale of Suicide Ideation (BSS). Model I – Step One – $R^2 = .29$, $\text{Adj}R^2 = .26$, Step Two – $R^2 = .32$, $\text{Adj}R^2 = .29$ ($p < .05$). Model II – Step One – $R^2 = .45$, $\text{Adj}R^2 = .42$, Step Two – $R^2 = .47$, $\text{Adj}R^2 = .44$ ($p < .05$).

of optimistic explanatory style and traumatic life events, and their interaction, on suicide ideation, was tested and found to be significant; $t = 2.54$, $p < .05$, $\beta = .19$ (see Table 2). This moderating effect remained in a controlled model, covarying hopelessness and depressive symptoms; $t = 2.10$, $p < .05$, $\beta = .14$ (see Table 2). Individuals with a more optimistic explanatory style were less likely to express suicidal ideation as a result of potentially traumatic life events, over and above the influence of hopelessness and depressive symptoms (see Figure 1). Age and hopelessness, although covariates, were also significant predictors of suicide ideation.

Discussion

The experience of negative and potentially traumatic life events may contribute to the development of suicidal thoughts and behaviors; however, this effect may be buffered by adaptive cognitive characteristics. After controlling for the effects of age, gender, depressive symptoms, and hopelessness, explanatory style moderated the association between trauma and suicide ideation. Our findings suggest that the manner in which an individual interprets the negative life experiences they encounter influences their level of suicidal ideation. In the context of potentially traumatic life events, individuals with an optimistic explan-

atory style report having less suicide ideation than individuals with a pessimistic explanatory style. Attributing a negative life event to personal characteristics, believing that a negative life event might recur, or that experiencing a negative life event will affect all areas of ones' life, may contribute to the development or maintenance of suicidal thoughts and behaviors. On the other hand, if an individual avoids self blaming and can acknowledge a traumatic experience as an isolated event with limited ramifications for other areas of their life then, perhaps, they may be at decreased risk for suicidal thoughts and behaviors.

Our findings may also have implications for the treatment of trauma-related suicidal thoughts and behaviors. Individuals who think positively about their future appear to be protected from some adverse medical and psychological outcomes (Achat, Kawachi, Spiro, DeMolles, & Sparrow, 2000), perhaps through the use of active adaptive strategies (Miller et al., 1996) or establishment of meaningful and supportive interpersonal relationships that foster optimism (Brissette, Scheier, & Carver, 2002). An individual who is able to explain his or her past in an optimistic manner and engender a positive outlook toward the future may reduce distress, thereby mitigating risk (Hawkins & Miller, 2003; Vaillant, 2003). Preliminary findings suggest that teaching individuals to think optimistically can increase hopefulness (Johnson, Crofton, & Feinstein, 1996) and reduce depression in adolescents, college students, and outpatients being

treated for depression (Barber & Derubeis, 2001; Gillham & Reivich, 2004; Puskar et al., 1999). Perhaps similar techniques could be used to decrease suicide ideation in patients who have experienced a traumatic life event.

Our novel findings must be interpreted within the context of several limitations. Cross-sectional data preclude the ability to examine causal effects of future orientation on the initiation or maintenance of suicidal ideation and behavior. Prospective research with diverse clinical and community samples is needed to determine whether the risk of suicidal behavior is lower in traumatized individuals who are able to construct a positive perspective on their past negative life events. Such an optimistic explanatory style may be advantageous in the prevention of suicide, and prospective investigation of the mechanisms by which future-oriented and optimistic cognitive characteristics might exert a protective effect in individuals who have experienced trauma is warranted. Further, potential detrimental effects of future orientation on psychological functioning should be explored (Segerstrom, 2001, 2005). Increased understanding of adaptive and future-oriented characteristics that might mitigate the development and expression of suicidal thoughts and behaviors may lead to the development of improved treatments.

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