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Negative Cognitive Style as a Predictor of Negative Life Events in Depression-Prone Individuals: A Test of the Stress Generation Hypothesis

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Abstract

Background—Stress generation effects in depressed individuals have been well-documented. However, less is known about what personal attributes of depression-prone individuals may contribute to the stress generation effect. This study investigated the role of negative cognitive style in predicting the occurrence of negative life events.

Methods—Undergraduates identified as either high ($n = 76$) or low ($n = 81$) in negative cognitive style were assessed for lifetime history of depression followed by periodic assessment over the course of six months for the occurrence of negative life events and depressive episodes.

Results—Individuals with negative cognitive styles generated more negative life events (dependent events and interpersonal events, but not more independent or achievement-related events) than individuals with more positive cognitive styles. These results appear to be unique to women.

Limitations—Utilizing participants specifically chosen to be high or low in negative cognitive style may limit generalizability to other individuals.

Conclusions—Results suggest that an underlying negative cognitive style may account for the stress generation effect often found in depressed individuals, particularly for women. Adequately addressing cognitive patterns in treatment or prevention programs may not only effectively reduce depression, but may also reduce the likelihood of experiencing negative life events that often serve as precipitants for depression.

Keywords

stress generation; cognitive style; depression; life events

1. Introduction

Much research indicates that not only do negative life events increase one's risk for depression (see Paykel & Cooper, 1992 for a review), but depression can also lead to increased risk for

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negative life events (e.g., Daley et al., 1997; Davila et al., 1995; Hammen, 1991; Harkness et al., 1999; Potthoff et al., 1995; Simons et al., 1993). This *stress generation* effect (Hammen, 1991) indicates that depressed individuals, and individuals with a recently remitted depression, often experience an increased rate of life events that are interpersonal in nature and/or dependent on their behavior. Therefore, although depression can be initiated by stressful events outside one's control, something about depression-prone individuals' personality and behavior may also result in life stressors, which may maintain their current depression or put them at risk for an initial onset or a recurrence of depression (Joiner et al., 2005b).

Despite substantial evidence supporting the stress generation effect, it is less clear what personal factors may contribute to the generation of stressful events in depressed individuals. It, therefore, is important to consider alternative factors that might account for the stress generation effect beyond just the presence (or recent remission) of depression itself. For example, such personality characteristics as negative cognitive style (Hammen, 1991; Simons et al., 1993), sociotropy and autonomy (Daley et al., 1997; Nelson et al., 2001; Shih, 2006), coping style (Wingate & Joiner, 2004), and social skills deficits (Segrin, 2001) have been suggested as factors that may play a significant role in stress generation among depression-prone individuals. Joiner and colleagues (Joiner et al., 2005a; 2005b) suggested that hopelessness may also be important in the generation of negative life events. Namely, they propose that negative cognitive style may lead to a sense of hopelessness that then increases risk for both subsequent depressive episodes and negative life events (Joiner et al., 2005b). The purpose of the present study is to further explore the role of negative cognitive style as a risk factor for stress generation.

According to two major cognitive theories of depression—the hopelessness theory (Abramson et al., 1989) and Beck's (1987) theory—particular maladaptive cognitive styles increase individuals' vulnerability to depression. In the hopelessness theory, cognitive vulnerability is characterized as a tendency to attribute negative life events to stable and global causes, infer that further negative consequences will follow from a negative event, and believe that the occurrence of the negative event implies one is deficient and unworthy. Having this underlying cognitive vulnerability is believed to put one at risk for feelings of hopelessness which, in turn, serve as a proximal cause of depression. In Beck's theory, cognitive vulnerability is reflected by a set of dysfunctional attitudes according to which one's happiness and self-worth are thought to depend on being perfect or gaining other's approval. There is considerable evidence that individuals with such negative cognitive styles are more vulnerable to depression than individuals with more positive cognitive styles (e.g., Alloy et al., 2000; 2006).

Are individuals with negative cognitive styles not only more likely to become depressed, but also more likely to experience negative life events than individuals with more positive cognitive styles? Monroe and Simons (1991) proposed that an underlying vulnerability to depression, especially a cognitive predisposition, is likely to influence the manner in which an individual negotiates life's course and consequently, the stressors he or she might experience. Hammen (1991) also speculated that negative cognitions may play a role in stress generation. Although the role of negative cognitive style in generating stressful life events was proposed over a decade ago, it has not been adequately researched. One empirical study has indeed suggested a relationship between negative cognitive style and the reporting of negative life events in a sample of endogenously depressed individuals (Simons et al., 1993). However, this study involved retrospective, rather than prospective, reporting of negative life events by currently depressed individuals making it difficult to rule out the possibility of reporting biases. Likewise, Joiner and colleagues (2005b) explored the relation between hopelessness and stress generation, and proposed that negative cognitive style may lead to hopelessness, which then leads to both depression and stress generation. However, they did not test the more distal risk factor of negative cognitive style directly and they relied on self report measures of depression

and life events, which may not accurately reflect the relation between actual diagnoses of depression and interviewer-verified life events (Simons et al., 1993). Still, these empirical studies suggest that cognitive style may indeed play a role in stress generation.

The possibility that negative cognitive style may predict the occurrence of stressful life events is further indicated by research concerning the relatively persistent nature of negative cognitive style compared to depressive episodes. Whereas depressive episodes tend to be episodic, cognitive styles have been proposed to be more enduring although not immutable (Just et al., 2001). Therefore, the increased reporting of negative life events by individuals who have a history of depression might be better explained by their underlying negative cognitive style, rather than specifically by the presence of a depressive episode. A demonstration of a greater occurrence of negative life events in individuals with negative cognitive styles compared to those with more positive cognitive styles in a prospective study would serve as a useful modification and extension of the stress generation hypothesis.

The present study tested the following hypotheses: 1) Consistent with existing research, individuals with a history of depression will experience more negative life events than individuals with no history of depression. 2) As proposed above, individuals with a negative cognitive style will experience more negative life events than individuals with a more positive cognitive style. 3) A relation between negative cognitive style and stress generation will continue to be present in the absence of a history of depression and current depression, supporting the contention that it is the negative cognitive style that leads to the stress generation rather than depression, per se.

2. Methods

2.1 Participants

One hundred and fifty-seven Temple University (TU) freshmen participating at the Temple site of the Cognitive Vulnerability to Depression (CVD) Project (Alloy & Abramson, 1999) were included in the present study. The retrospective collection of lifetime history of depressive disorders combined with prospective collection of cognitive style information, life event information, and the onset/recurrence of depressive disorders in the CVD Project complemented the goals of the current study. Participants in the CVD Project were selected according to a two-phase screening procedure (see Alloy & Abramson, 1999 for details) in which they were initially identified as being at cognitively high-risk (HR) or low-risk (LR) for depression based on their initial Cognitive Style Questionnaire (CSQ; Alloy et al., 2000) and Dysfunctional Attitudes Scale (DAS; Weissman & Beck, 1978) scores. In the second phase, a structured diagnostic interview (mod-SADS-L) was administered to a random subset of participants who met the Phase I criteria to obtain lifetime history of psychological disorders. Participants were excluded from the final CVD Project sample if they presented with any current DSM-III-R (American Psychiatric Association, 1987) or RDC (Spitzer et al., 1978) Axis I psychiatric disorder, psychotic symptoms, a history of manic, hypomanic, bipolar, or cyclothymic disorder(s), or any serious medical illness. Participants were also excluded from the present study if they were missing any data (e.g., incomplete diagnostic history information, missing prospective life events information) relevant to our hypotheses. In our final sample, HR participants tended to be slightly younger than LR participants and had significantly higher rates of lifetime history of depression, which was expected (Alloy et al., 2000; See Table 1).

2.2 Measures

Cognitive Style Questionnaire (CSQ)—The CSQ (Alloy et al., 2000) assesses the degree to which an individual makes internal, stable, and global attributions as well as negative inferences about the consequences and self-implications of 12 positive and 12 negative events.

In the CVD Project, an additive composite score of the stability, globality, consequences, and self-concept dimensions for negative events was used (along with the DAS) in defining the HR (negative cognitive style) and LR (positive cognitive style) participants. The 1-year retest reliability of the CSQ negative composite was $r = .80$ and internal consistency was $\alpha = .88$ (Alloy et al., 2000).

Dysfunctional Attitudes Scale (DAS)—The DAS (Weissman & Beck, 1978) is a 40-item self-report inventory that assesses maladaptive attitudes involving concern with evaluation, perfectionistic standards of performance, pessimism, expectations of control, and causal attributions. An expanded 64-item DAS was used in conjunction with the CSQ to select cognitively HR and LR participants (negative or positive cognitive style). In the CVD Project, the expanded DAS demonstrated 1-year retest reliability of $r = .79$ and internal consistency of $\alpha = .90$ (Alloy et al., 2000).

Life Events Scale (LES) and Stress Interview (SI)—The LES (Needles & Abramson, 1990; Alloy & Clements, 1992) was designed for the CVD Project and includes 134 major and minor episodic or chronic life events in a wide variety of content domains relevant to college students (e.g. school, family, finances, romantic relationships). In the current study, participants completed the LES approximately every 6 weeks for six months. They reported the occurrences of episodic events and the duration of chronic situations over the course of each 6-week time interval. The LES has good documented reliability and validity (Alloy & Clements, 1992; Needles & Abramson, 1990).

After completing the LES, participants were interviewed by a trained research assistant who was blind to the participant's risk group status. The Stress Interview (SI) served as a check on the reliability and validity of the LES and provided for the precise definition and dating of events. The SI allowed life events to be more objectively identified, in an attempt to reduce any problems related to subjective report biases. Explicit criteria for event definition and a priori probes are provided to the interviewer to help him/her determine whether reported events on the LES met the criteria of these provided definitions. Any events that did not meet the stringent criteria were disqualified. Interviewers also probed for any additional life events that may not have been reported on the LES.

Reliability checks were conducted periodically to prevent interviewer drift. In addition, life event items were discussed at weekly research team meetings so that a final consensus decision on the occurrence and rating of the event could be made. This process was similar to the consensus ratings commonly used in other LED-based (Brown & Harris, 1978) life events research. Alloy and Abramson (1999) reported excellent reliability and validity for the LES with the SI in terms of its ability to accurately capture the life events experienced by an individual over a period of time. For the current study, all major life events identified via the SI were used. We limited our evaluation to major events (minor events were excluded from our analyses) to increase comparability with existing stress generation research, which tends to focus on major, severe life events.

Negative life events from the LES were a priori identified as interpersonally-related (i.e., negatively impact one's affiliation, social approval, and social support), achievement-related (i.e., negatively impact one's academic, athletic, or occupational goals or aspirations), or neither (i.e., don't fit clearly into either of the above domains). In addition, negative life events identified during the SI were rated by independent raters (two clinical psychologists and one advanced clinical doctoral student) in terms of their independence/dependence, with regard to how much influence the participant was likely to have had over the occurrence of the event, taking into account contextual information. All events were rated from 0 to 3 (0 = totally independent, 1 = possibly dependent, 2 = probably dependent, and 3 = definitely dependent)

and a final independence/dependence rating was obtained by calculating the mean score for all three raters. Inter-rater reliability for the three judges' independence/dependence ratings was $\alpha = .95$. All events with a mean rater score of 0 (totally independent) were identified as independent and all events with a mean rater score of 2-3 (moderately to extremely dependent) were identified as dependent for our analyses. Events with a mean score of 1 were excluded from our independence/dependence tests to more clearly demarcate between independent and dependent events. Examples of independent events include "Death of close family member or close friend" and "Apartment, house, or room broken into". Examples of dependent events include "Failed a course" and "Got in serious trouble with the law".

Modified Schedule for Affective Disorders and Schizophrenia—Lifetime (Mod-SADS-L) and —Change (Mod-SADS-C) interviews—The Mod-SADS-L is a structured interview used to make current and lifetime diagnoses of various psychological disorders. The Mod-SADS-C is similar, but is limited to diagnoses over a given period of time (e.g., 6-week intervals in the present study). The original versions of the SADS-L (Endicott & Spitzer, 1978) and SADS-C (Spitzer & Endicott, 1978) were expanded and modified in the following ways for use in the CVD project: (1) additional probes were added to assess DSM diagnoses in addition to RDC diagnoses; (2) additional probes were added to explicitly assess the duration of symptoms and the percentage of participants' waking hours each day they were experiencing those symptoms; (3) components of the Anxiety Disorders Interview Schedule-Revised (ADIS-R; DiNardo et al., 1985) were included in the anxiety section; (4) all items relevant to a given diagnosis were grouped together to make the interview less confusing to the participants; and (5) aspects of the Longitudinal Interval Follow-up Evaluation (LIFE II; Shapiro & Keller, 1979) were incorporated into the Mod-SADS-C to provide a systematic method of tracking and creating a timeline of the day-to-day fluctuation in symptoms of a disorder throughout the prospective follow-up.

The Mod-SADS-L and -C interviews were conducted by trained research assistants who were blind to the participant's cognitive risk status. The Mod-SADS-L was conducted at Phase 2 of screening and the Mod-SADS-C was conducted every six weeks for six months in the current study. In the CVD study, interrater reliability was $\kappa \geq .90$ for both the Mod-SADS-L (Alloy et al., 2000) and the Mod-SADS-C (Alloy et al., 2006), based on a sampled subset of the interviews conducted.

In the current study, the following diagnoses from the Mod-SADS-L interviews were included in our analyses: RDC major depression, definite and probable; DSM-III-R major depression and major depression, probable (although the probable category doesn't exist in the DSM, it was established for the CVD Project to provide a counterpart to the RDC major depression, probable diagnosis); RDC minor depression; and DSM-III-R Depression, Not Otherwise Specified. This expanded definition of "depression" was used due to the fact that negative cognitive style is believed to increase risk for all levels of depression. Failure to include lower levels of depression may overestimate the importance of negative cognitive style as a predictor of stress generation due to unaccounted conflation.

2.3 Procedures

Participants were randomly assigned to interviewers and were assessed every six weeks for six months. At the initial assessment, participants completed the CSQ, DAS, and Mod-SADS-L. Approximately every six weeks, participants completed the LES and were interviewed using the SI and the Mod-SADS-C to obtain information about life events and diagnostic symptoms and episodes, respectively, occurring since their last interview.

3. Results

3.1 History of Depression and Stress Generation

We attempted to replicate previous research indicating a relation between history of depression and stress generation (Chun et al., 2004; Daley et al., 1997; Hammen, 1991). Interestingly, in our sample history of depression (defined as any major or minor depressive episode prior to the start of the study) was not predictive of any of the categories of negative life events under investigation: dependent ($M_{\text{dep-hx}} = 0.63$, $M_{\text{no-hx}} = 0.65$; $t(155) = 0.15$, *ns*), independent ($M_{\text{dep-hx}} = 1.03$, $M_{\text{no-hx}} = 0.91$; $t(155) = -0.63$, *ns*), interpersonal-related ($M_{\text{dep-hx}} = 1.61$, $M_{\text{no-hx}} = 1.62$; $t(155) = 0.04$, *ns*), or achievement-related ($M_{\text{dep-hx}} = .75$, $M_{\text{no-hx}} = .74$; $t(155) = -0.06$, *ns*). It is possible that our more liberal definition of depression may have negatively impacted our ability to find a stress generation effect. Therefore, we re-ran our analyses including only individuals with an RDC or DSM major definite depression diagnosis. History of major depression was still not significantly predictive of negative life events: dependent ($M_{\text{dep-hx}} = 0.71$, $M_{\text{no-hx}} = 0.65$; $t(116) = -0.27$, *ns*), independent ($M_{\text{dep-hx}} = 1.22$, $M_{\text{no-hx}} = 0.91$; $t(116) = -1.33$, *ns*), interpersonal-related ($M_{\text{dep-hx}} = 1.78$, $M_{\text{no-hx}} = 1.62$; $t(116) = -0.44$, *ns*), or achievement-related ($M_{\text{dep-hx}} = .73$, $M_{\text{no-hx}} = .74$; $t(116) = 0.04$, *ns*).

Presence of depression at the time of initial evaluation was an exclusion criterion in this study. Therefore, many of the past diagnoses of depression were remote rather than recent episodes, averaging approximately 28 months prior to the start of the study. This possibly could adversely affect the ability to find a significant relationship between history of depression and stress generation, so we ran correlational analyses to determine whether there might be a significant relationship between the recency of the depressive episode and the number of prospective negative life events reported. However, all the correlations were non-significant, ranging from $r = -.09$ to $.05$ for the four categories of negative events.

3.2 Cognitive Style and Stress Generation

Examining negative major life events reported over 6-months, individuals with a negative cognitive style experienced a significantly higher number of dependent ($M_{\text{HR}} = 0.82$, $M_{\text{LR}} = 0.47$; $t(155) = -2.13$, $p < .05$, *Cohen's d* = .34) and interpersonal ($M_{\text{HR}} = 1.96$, $M_{\text{LR}} = 1.30$; $t(155) = -2.45$, $p < .05$, *Cohen's d* = .39) events, but not more independent ($M_{\text{HR}} = 0.99$, $M_{\text{LR}} = 0.95$; $t(155) = -0.20$, *ns*) or achievement-related ($M_{\text{HR}} = 0.83$, $M_{\text{LR}} = 0.67$; $t(155) = -1.01$, *ns*) events than individuals with a positive cognitive style. Given the concern that a history of depression or the presence of current depression may be skewing the results, and that statistically controlling for depression does not adequately address this potential impact (Miller & Chapman, 2001), cognitive style was re-tested after excluding all individuals with current or past depression diagnoses. This did not change the results; individuals with negative cognitive style continued to report significantly more dependent ($M_{\text{HR}} = 1.08$, $M_{\text{LR}} = 0.43$; $t(71) = -2.31$, $p < .05$, *Cohen's d* = .51) and interpersonal ($M_{\text{HR}} = 2.42$, $M_{\text{LR}} = 1.24$; $t(71) = -2.47$, $p < .05$, *Cohen's d* = .54) events, but not more independent ($M_{\text{HR}} = 0.96$, $M_{\text{LR}} = 0.86$; $t(71) = -0.37$, *ns*) or achievement-related ($M_{\text{HR}} = 1.04$, $M_{\text{LR}} = 0.57$; $t(71) = -1.69$, *ns*) events than individuals with a positive cognitive style.

3.3 Gender and Stress Generation

Finally, although this was not part of our primary hypotheses, we explored gender differences in stress generation, given previous research suggesting that gender may play a role in stress generation effects (e.g., Rudolph & Hammen, 1999; Shih, 2006). Initial analyses indicated no gender differences in the reporting of any of the four categories of life stress under investigation (independent, dependent, interpersonal, and achievement). However, when re-running the above cognitive style analyses separately for men and women, we found that negative cognitive style was predictive of an increase in dependent events ($M_{\text{HR}} = 0.92$, $M_{\text{LR}} = 0.42$; $t(103) =$

-2.39, $p < .05$, *Cohen's d* = .46) and interpersonal events ($M_{HR} = 2.16$, $M_{LR} = 1.44$; $t(103) = -2.11$, $p < .05$, *Cohen's d* = .41) for women, but not for men ($M_{HR} = 0.62$, $M_{LR} = 0.58$; $t(50) = -0.15$, *ns* for dependent and $M_{HR} = 1.58$, $M_{LR} = 1.00$; $t(50) = -1.35$, *ns* for interpersonal events). Independent and achievement events were not significant for men or women. History of depression continued to be non-significant as a predictor of negative life events for both genders in these gender-separated analyses.

4. Discussion

We evaluated whether cognitive style might be an important explanatory factor in determining why individuals with depression report more negative life events. The results suggested that negative cognitive style does indeed appear to predict the occurrence of future negative life events, at least for women. In fact, in our study, negative cognitive style was predictive of negative events, whereas history of depression was not.

In comparing our results to previous studies with regard to history of depression (e.g. Daley et al., 1997; Davila et al., 1995; Hammen, 1991), it must be pointed out that most previous studies evaluated recently remitted episodes of depression, whereas the present study used lifetime history of depression. In our sample, the average length of time between most recent depressive episode and participation in the study was approximately 28 months. This length of time may explain why a stress generation effect associated with history of depression was not found. A recent study found that history of depression is predictive of negative life events up to a year later, but not significantly predictive of events 10 years later (Chun et al., 2004). Combining our results with the results of this study suggests that the stress generation effect associated with diagnoses of depression may dissipate as one gets temporally further from the depressive episode. One could argue that this further supports our contention that the stress generation effect may not be due to depression, per se, but rather to one's underlying negative cognitive style. Individuals with negative cognitive styles may not only experience higher rates of depression (Alloy et al., 2006), but may also be at increased risk for negative life events, as was found in the current study.

In fact, it is possible that having a negative cognitive style may increase one's risk for negative life events via stress generation, which then may lead to initial onset or recurrence of depression, similar to the hopelessness model proposed by Joiner et al. (2005b). In addition, given that cognitive styles tend to be relatively stable across time, whereas depressive episodes often wax and wane, it is possible that cognitive style could explain increased occurrences of negative life events before, during, and following a depressive episode. It would be interesting to empirically investigate Joiner's model further, by examining the longitudinal interplay of negative cognitive style, hopelessness, depression, and negative life events.

Based on our results and those of other studies (Segrin, 2001; Shih, 2006; Wingate & Joiner, 2004), various enduring characteristics (such as cognitive style) should be considered in addition to presence of depression in future tests of the stress generation hypothesis. If future research continues to support the role of negative cognitive style as a stress generator, the potential clinical implications are that therapy focused on altering underlying negative cognitive patterns may not only effectively treat depressive episodes, but may also reduce the occurrence of negative life events that trigger subsequent episodes of depression. Given the reciprocal relationship between depression and negative life events (e.g., Davila et al., 1995; Joiner et al., 2005b), directly altering the enduring, but not immutable (Just et al., 2001), cognitive styles of depression-prone individuals may be an effective way of breaking this vicious cycle. Another important implication of these results is that current cognitive vulnerability-stress theories (Abramson et al., 1989; Beck, 1987) may need to be adjusted to adequately reflect the complexity of the interaction among cognitive vulnerability, life stress,

and depression. Specifically, not only do cognitive vulnerabilities increase risk for depression when negative life events are experienced, but they may also lead to an increase in the very life events that predispose an individual to depression.

It is interesting that the above findings demonstrate a stress generation effect for women, but not for men. Although several of the early studies of stress generation were limited to female samples (e.g., Davila et al., 1995; Daley et al., 1997; Hammen, 1991), several studies have included both men and women (e.g., Joiner et al, 2005a, Potthoff, et al, 1995; Simons et al, 1993; Wingate & Joiner, 2005). However, these studies typically did not directly assess gender differences or, when they did, failed to find main effects based on gender, as did the current study. Following the methodology employed by Shih (2006), it is quite interesting that cognitive style demonstrated differential stress generation effects when evaluating men and women separately, despite the fact that negative cognitive style did not differentially predict occurrence of depression between men and women in this sample (Alloy et al., 2000; 2006). The present findings are consistent with Shih's results, in which she found the personality characteristic of sociotropy to have a stress generation effect in women, but not men. Therefore, although negative cognitive style and sociotropy are associated with depression in both genders, neither appears to reflect the underlying depressive personality characteristic that accounts for depressive stress generation effects in men. Future research needs to continue to evaluate these gender differences to determine if some other personality factor may predispose stress generation in depressed men.

The current study provides an interesting extension of the stress generation hypothesis, by indicating that negative cognitive style may account for stress generation effects, both in depressed individuals and in individuals who are at cognitive risk for depression but have not yet experienced a depressive episode. However, we must consider some limitations of the present study. Participants in the current study were pre-selected based on their cognitive styles, whereas previous studies have tended to use general community samples and clinically depressed samples. It is possible that using participants with extreme negative and positive cognitive styles may have inflated the link found between negative cognitive style and stress generation, while de-emphasizing the depression-stress generation link. However, this is true of all such studies. For example, clinically depressed samples compared to "normal controls" could serve to overshadow the effects of other contributory factors in the generation of stressful events. However, it would be beneficial to replicate the current study in a general population sample with a broader range of cognitive styles rather than individuals at the extreme ends of cognitive style.

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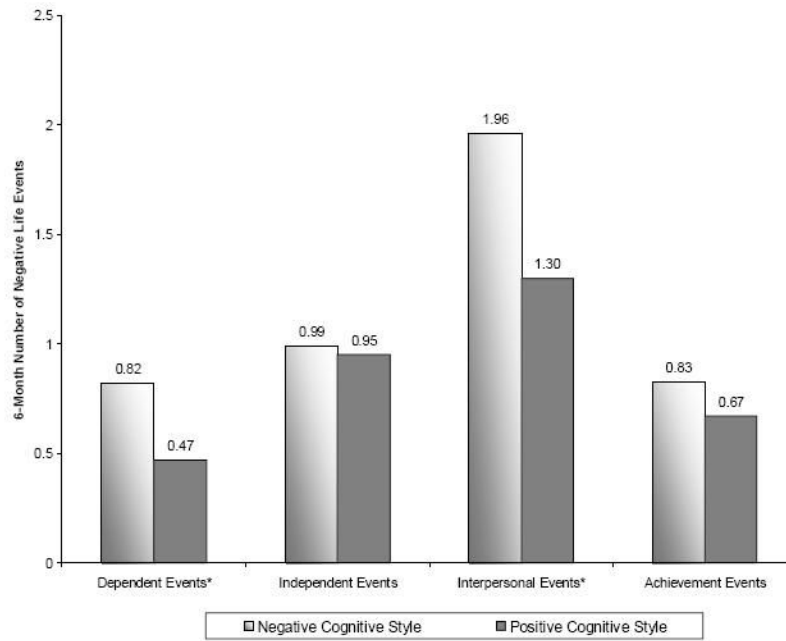


Figure 1.
Comparison of 6-month totals of negative life events, as a function of cognitive style.
* $p < .05$

Table 1
Demographic Information for Study Participants, by Risk Group

| Demographic Variable | High-Risk | Low-Risk |
|---|---------------------|---------------------|
| Number of Participants | 76 | 81 |
| % Lifetime History of Any Depression | 64.5 | 38.3** |
| % Lifetime History of Major Depression | 36.8 | 16.0** |
| % Caucasian | 68.4 | 54.3 |
| Sex (% Women) | 65.8 | 67.9 |
| Age ⁺ | 18.74 (1.42) | 19.85 (2.92)* |
| Average Parental Education, in Years ⁺ | 13.84 (2.53) | 13.47 (2.22) |
| Combined Parental Income ⁺ | \$50,068 (\$36,990) | \$39,873 (\$26,046) |
| Median Parental Income | \$42,000 | \$35,300 |

* p < .01;

** p < .001.

Dichotomous variables evaluated using chi-square; continuous variables evaluated using t-tests.

⁺ Age, Parental Education, and Parental Income are reported as means and (standard deviations).