

# Expression of Stressful Experiences Through Writing: Effects of a Self-Regulation Manipulation for Pessimists and Optimists

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This study assessed the effectiveness of a writing task designed to foster self-regulatory coping with stressful experiences to reduce medical clinic visits and to promote adjustment. Students entering college ( $N = 122$ ) who were classified as optimists or pessimists by using a dispositional optimism measure participated in a self-regulation task (expressing thoughts and feelings about entering college and then formulating coping plans), a disclosure task (expressing thoughts and feelings only), or a control task (writing about trivial topics) for 3 weekly writing sessions. Among optimists, both the self-regulation task and the disclosure task reduced illness-related clinic visits during the following month; among pessimists, only the self-regulation task reduced clinic visits. In general, the self-regulation task beneficially affected mood state and college adjustment whereas the disclosure task increased grade point averages.

*Key words:* emotional disclosure, optimism, medical care seeking, self-regulation theory, stress, coping

Accumulating evidence indicates that disclosure of stressful experiences through writing can provide therapeutic benefits for a significant proportion of individuals. Research initiated by James Pennebaker and his associates has demonstrated that writing about one's thoughts and feelings regarding stressful events for up to 20 min on each of several days can reduce health clinic visits (Pennebaker & Beall, 1986; Pennebaker, Colder, & Sharp, 1990; Pennebaker & Francis, 1996), enhance immunocompetence (Pennebaker, Kiecolt-Glaser, & Glaser, 1988; Petrie, Booth, Pennebaker, Davison, & Thomas, 1995), decrease absenteeism (Francis & Pennebaker, 1992), increase the likelihood of obtaining new employment among individuals who recently lost their jobs (Spera, Buhrfeind, & Pennebaker, 1994), and improve grade point averages (GPAs) among first-year college students (Pennebaker et al., 1990; Pennebaker & Francis, 1996).

However, not everyone benefits from the writing process. Whereas many participants show improvements following the writing experience, some exhibit no change, and others appear to get worse (Bucci, 1995; Pennebaker, 1993). The disclosure writing task appears to facilitate adjustment when

participants initially discuss their problems and emotions in depth and later express insight and resolution (Pennebaker, 1993; Pennebaker & Francis, 1996). This pattern suggests that writing is therapeutic when participants write about their thoughts and emotions in ways that enable them to make sense of their experiences and to identify ways to resolve conflicts. Although many individuals who use this task may naturally develop cognitive representations of stressful events that promote insight and adaptive coping, others may get mired in ineffective ruminations that inhibit the development of effective coping strategies. The question then arises of whether the writing task can be modified to more effectively promote adjustment, particularly for those who do not benefit from disclosure alone.

## A Self-Regulation Writing Task

This study explores the efficacy of a self-regulation writing task that not only allows writers to explore their thoughts and feelings about stressful experiences, but that also helps them focus on selecting, enacting, and appraising specific ways to cope with these problems. This writing task is based on a self-regulation theory of emotion, cognition, and behavior (Leventhal, 1970) that delineates the influence of cognitive representations of stressful experiences on coping behaviors and health-related outcomes (Cameron, Leventhal, & Leventhal, 1995; Leventhal & Diefenbach, 1991).

From a self-regulation perspective, writing can facilitate adjustment to stressful events by promoting the development of a representation that coherently integrates beliefs, emotions, and experiences so that the individual can better make sense of the events and identify ways to cope with them. However, writing may not promote adjustment if it fosters maladaptive representations of events that inhibit the development of coping strategies. The self-regulation writ-

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ing task aims to promote effective self-regulation by focusing the writer on problematic aspects of the events and then prompting him or her to form and appraise coping strategies. Specifically, it instructs participants to write about their thoughts and feelings concerning current problems and then to identify specific strategies for resolving these problems. In subsequent sessions, participants again spend time disclosing their thoughts and feelings, after which they appraise the success of their coping efforts and generate new coping plans.

### Dispositional Optimism and Coping With Stress Through Writing

Individuals with pessimistic orientations may represent one group for whom the self-regulation writing task is more beneficial than the traditional disclosure task. Although alternative theories of pessimism and optimism exist (Peterson & Seligman, 1984), Scheier and Carver (1985, 1992) provided a self-regulation conceptualization of optimism as a tendency to expect positive outcomes under conditions of uncertainty. Optimistic individuals appear to cope relatively well in stressful situations because they tend to anticipate positive outcomes; consequently, they tend to exhibit adaptive behaviors such as active coping and positive reinterpretation of events (Aspinwall & Taylor, 1992; Scheier, Weintraub, & Carver, 1986). Pessimists, on the other hand, tend to develop negative outcome expectancies that inhibit motivations to initiate active coping; instead, they tend to exhibit helplessness, avoidance, and behavioral disengagement (Aspinwall & Taylor, 1992; Peterson, Colvin, & Lin, 1992; Scheier et al., 1986). These maladaptive coping tendencies are associated with poorer levels of psychosocial adjustment, health behaviors, and health status (Aspinwall & Taylor, 1992; Kamen-Siegel, Rodin, Seligman, & Dwyer, 1991; Peterson, 1988; Scheier & Carver, 1992).

Writing about stressful experiences, in promoting the development of representations, may exacerbate the formation of positive and negative outcome expectancies for optimists and pessimists, respectively. Optimists engaged in disclosure writing may be more likely to use the opportunity to explore conflicts, strive for insight, and identify coping strategies that promote adjustment. Pessimists, on the other hand, may tend to write about problems in a more defeatist manner, ruminating on the negative aspects of the situation and developing a sense of hopelessness. Consequently, they may be less successful in identifying ways to resolve their conflicts and therefore less likely to gain therapeutic benefits from undirected disclosure writing. The self-regulation writing task, in guiding pessimistic individuals to focus on specific problems and to identify and appraise coping efforts, may be more effective than the disclosure writing task in facilitating their adjustment.

### Self-Regulation Writing, Disclosure Writing, and Adjustment to College

The present study evaluated the effectiveness of the self-regulation task and the disclosure task in facilitating adjustment to college, enhancing academic performance,

and reducing medical-care seeking rates for optimistic and pessimistic students who were entering their first year of college. Entering college typically is a stressful transition for students. Failure to cope with this transition may lead to poor college adjustment, emotional distress, stunted academic performance, and increased use of medical services. Although medical-care seeking rates are often used as a measure of illness (e.g., Pennebaker et al., 1990; Piliusik, Boylan, & Acredelo, 1987), medical care seeking is best viewed as an illness behavior in that it can be motivated by a variety of psychosocial factors, including stress. Stressful events have been found to predict clinic visits even after statistically controlling for perceptions of illness severity and abilities to cope with the problems without medical intervention (Cameron, Leventhal, & Leventhal, 1993), and care seeking is often prompted by efforts to reduce emotional distress (Cameron et al., 1995). Because of the growing impetus to control excessive clinic use within managed care systems, care-seeking behavior has become an increasingly important health outcome.

Students beginning their first college semester completed pretest measures of optimism, negative mood, college adjustment, and health clinic visits. They then participated in three weekly sessions of either the disclosure task, the self-regulation task, or a control task that involved writing about trivial aspects of their college experiences. Students evaluated the efficacy of the writing tasks at the end of the final session, and they completed posttest measures of negative mood, college adjustment, and clinic visits 1 month later. GPAs were obtained from the registrar at the end of the semester. Openness to experience, assessed at the study's onset, was used as a covariate in analyses of care-seeking rates to reduce error variance on the basis of evidence that first-year college students who score high on the openness to experience measure engage in more activities that contribute to health problems and have higher care-seeking rates (Cecere, Curran, & Cameron, 1995).

We predicted that both the disclosure task and the self-regulation task would lead to reduced care-seeking rates, higher GPAs, and higher effectiveness ratings relative to the control task. Although the disclosure task did not reduce negative mood or increase college adjustment in previous studies (Pennebaker et al., 1990), we predicted that the problem-solving focus of the self-regulation task would inhibit negative mood and improve college adjustment relative to the control task.

Pessimists completing the self-regulation task were expected to report a greater reduction in care seeking, lower levels of negative mood, better college adjustment, higher GPAs, and higher task effectiveness ratings in relation to pessimists in the control condition. In contrast, we expected that pessimists completing the disclosure task would not differ from pessimists in the control condition on any of the outcome measures.

### Method

#### Participants

First-year college students ( $N = 134$ ) enrolled in introductory psychology courses (70% of the sample) and first-year English

courses (30% of the sample) participated in the study as one way of fulfilling a course requirement. Participants were randomly assigned to one of the three writing conditions, with the conditions being equated in terms of gender and course. Of the initial sample, 7 students failed to complete all three writing sessions and an additional 5 students did not complete the posttest questionnaire; the attrition rate was equivalent across the writing and optimism group conditions. The 89 women and 33 men in the final sample (91% of the initial sample) were primarily Caucasian (87%), 18 years of age (80%), and living on campus (78%).

## Design

We used a  $3 \times 2 \times 2$  mixed design in this study with writing condition and optimism group as between-subjects variables and pretest–posttest assessments as a within-subjects variable. The three writing conditions included (a) a disclosure task, in which participants were instructed to write about their “deepest thoughts and feelings about coming to college”; (b) a self-regulation task, in which participants were instructed to write about their deepest thoughts and feelings regarding problems in coming to college and then select and evaluate coping strategies for overcoming their problems; and (c) a control task, in which participants were instructed to write dispassionately about trivial aspects of college life.

Participants were divided into pessimists and optimists by using a median split of the distribution of scores on a pretest measure of optimism. Pretest measures were administered during the 3rd week of the fall semester; the posttest measures were completed during the 10th week of the semester, 4 weeks after participants completed the three weekly writing sessions.

## Writing Tasks

**Disclosure task.** Instructions for the disclosure task were identical to those used by Pennebaker et al. (1990). In each session, participants were instructed to “let go and write about your very deepest thoughts and feelings about coming to college” and were given several possible issues to consider (e.g., “emotions and thoughts about leaving your friends or parents,” “feelings of who you are or what you want to become”).

**Self-regulation task.** The instructions for the first session of the self-regulation condition guided participants through two self-regulation tasks: disclosure about college-related problems and challenges, and the development of coping plans. The disclosure instructions were equivalent to those for the disclosure condition, except that participants were instructed to focus on college-related problems or challenges and to write for only 15 min. Participants responded to the coping plan instructions during the final 5 min, which asked them to “list three things that [you] can do that will help [you] to deal with one or more of these problems or challenges.” Participants also wrote their coping plans on a reminder slip to take with them and to bring back to the next session.

The second and third sessions involved three self-regulation tasks: disclosure of problems, appraisal of coping strategies, and revision of coping plans. For the disclosure segment, participants were again instructed to write about college-related problems or challenges for 15 min. For the appraisal segment, participants were instructed to list the coping actions identified in the previous session and to indicate for each one (a) whether the participant had tried it; (b) if they had tried it, to what extent it was helpful; and (c) if they hadn’t tried it, why not. The coping segment again

instructed participants to list three actions for dealing with college-related problems, noting that they could be the same as or different from those listed in prior session(s). Participants again wrote the actions on a reminder slip; in the second session, they were asked to bring it back to the third session.

**Control task.** The writing instructions for the control condition sessions were identical to those used by Pennebaker et al. (1990) and required participants to write objectively about trivial aspects of their lives (i.e., activities since waking up that morning, plans for the rest of the day, and a previous social event). Participants were instructed to describe these events exactly as they occurred and not to mention their emotions, feelings, or opinions about them.

## Measures

**Optimism.** The Life Orientation Test (LOT; Scheier & Carver, 1985) was used to assess generalized optimistic expectancies about outcomes in life. The LOT includes 8 items that are rated on a scale ranging from *strongly disagree* (0) to *strongly agree* (4), and it has been found to have satisfactory levels of reliability, convergent validity, and discriminant validity (Scheier & Carver, 1985; Scheier, Carver, & Bridges, 1994). Thirty participants selected from across the experimental conditions completed the LOT a second time at the end of the semester, and test–retest reliability was high ( $r = .86$ ). Median splits of the distributions of scores (ranging from 0 to 31) for men ( $Mdn = 20$ ) and women ( $Mdn = 18$ ) divided participants into two groups: pessimists ( $n = 62$ ) and optimists ( $n = 60$ ).

**Health clinic visits.** Responses to two items were used determine the number of illness-related clinic visits: “In the past 4 weeks, how many times have you gone to see a doctor or used a health clinic?” and “What were the reasons for your visits?” Visits for primary prevention purposes and injuries were excluded. If a participant reported more than one clinic visit for a given illness episode, only the first clinic visit was counted because the rest were considered follow-up visits. Although previous studies assessed care-seeking rates by using medical records at a university health center (Pennebaker et al., 1990; Pennebaker & Francis, 1996), this self-report measure was used because the students in this study often seek medical care from private health care centers rather than from the university’s infirmary (all students had ready access to medical care at the infirmary).

**Adjustment to college.** Six items from the College Adjustment Test (Pennebaker et al., 1990) were selected on the basis of their internal consistency (Cronbach’s  $\alpha = .77$ ) for use as a self-report measure of college adjustment (e.g., “To what extent do you like college in general?”; “To what extent do you think that coming to college was a mistake?”). Item ratings ranged from *not at all* (1) to *a great deal* (7). Item ratings were summed to generate scores ranging from 8 to 63.

**Negative mood.** A 7-item measure of negative mood, condensed from a mood measure used in previous studies of stress and health (Cameron et al., 1995), asked participants to rate the extent to which they felt depressed, hopeless, anxious, calm, afraid, irritable, and angry on the previous day. Ratings ranged from *not at all* (0) to *extremely* (4), and summed scores ranged from 0 to 35 (Cronbach’s  $\alpha = .60$ ).

**Openness to experience.** Openness to experience was assessed with the corresponding subscale from the Revised NEO Personality Inventory (Costa & McCrae, 1992). This subscale consists of 12 items, each of which is rated on a 5-point scale, and scores range

from 0 to 48. The psychometric properties of this measure are well-established (Costa & McCrae, 1992).

**Perceived effectiveness of writing tasks.** A 6-item questionnaire administered at the end of the third writing session assessed perceptions of task effectiveness in eliciting disclosure of personal aspects of oneself, enhancing disclosure of issues that occupied the writer's thoughts, evoking strong emotions, providing meaningful and valuable writing experiences, helping to deal effectively with college-related problems and challenges, and enhancing control over college-related problems. Each item was rated on a scale ranging from *not at all* (1) to *a great deal* (7).

### Procedure

The experimenters visited the psychology and English classes during the 3rd week of the fall semester to administer the pretest measures and to schedule participants for the writing sessions. They explained that the study aimed to explore the lifestyles and concerns of incoming college students and that consenting students would complete questionnaires periodically during class and also write about their college experiences during three writing sessions. Students were assured that the questionnaire responses and essays would be confidential, with anonymity insured through the use of code numbers on all materials. Students then completed pretest measures of optimism, openness to experience, negative mood, health clinic visits, and college adjustment.

Up to 8 students from across the experimental conditions participated in each set of writing sessions, which were held at the same day and time of the 3 weeks following pretest. At the beginning of each session, the experimenter explained that the participants would spend 20 min writing continuously about aspects of their college experiences in accordance with written instructions. The experimenter handed out the writing task instructions and left the room, after which each participant sat at a desk secluded by room dividers and commenced writing. The experimenter returned briefly after 15 min to announce that 5 min remained as a cue for self-regulation task participants to begin the coping segment. On completion, students were asked to place their essays in a box as they left the room and to refrain from discussing the session with others. Participants completed the measure of writing task effectiveness at the end of the third session. During the 10th week of the semester, the experimenters returned to the classes to administer the posttest measures of negative mood, health care visits, and college adjustment. Participants were debriefed after the study's completion.

## Results

### Treatment of Clinic Visits Scores

A common problem presented by clinic visit data is that it is positively skewed because a large proportion of participants reported no clinic visits. The present data reflects this degree of skewness. This problem was addressed in two ways. First, log transformations of pretest clinic visits were used in the correlational analyses and analyses of pretest differences between the experimental groups. Second, difference scores were created by subtracting posttest clinic visits from pretest clinic visits for use in the assessments of writing task effects (cf. Pennebaker & Francis, 1996). These difference scores were normally distributed, with positive values reflecting increases in clinic use over time.

### Simple Correlations Among Individual Difference and Outcome Variables

Table 1 presents the correlations for gender, the personality measures, and the outcome variables. Optimism was positively associated with pretest and posttest reports of college adjustment, yet it was unrelated to negative mood and clinic visits. As expected, openness to experience was positively related to an increase in clinic visits during the semester. Openness to experience was also associated with higher Scholastic Aptitude Test (SAT) scores and fall semester GPAs, poorer college adjustment at posttest, and stronger negative mood at the semester onset. There were no gender differences in any measures.

### Writing Task and Optimism Effects

Participants in the disclosure and self-regulation conditions wrote about a variety of problems, ranging from issues regarding homesickness, loneliness and difficulties finding new friends, conflicts with roommates and friends, problems with romantic partners, difficulties with classes, and time-management problems to traumas involving serious illnesses or deaths among family members and friends, drug dependence among friends and family, and financial hard-

**Table 1**  
*Simple Correlations Among Individual Difference and Outcome Variables*

Measure or variable	1	2	3	4	5	6	7	8	9	10	11
1. Gender <sup>a</sup>	—										
2. Optimism	-.09	—									
3. Openness to experience	.06	-.07	—								
4. SAT scores	-.09	.00	.32**	—							
5. Pretest clinic scores	.14	-.01	-.10	-.12	—						
6. Change in clinic visits <sup>b</sup>	.14	-.02	.19*	.07	-.60**	—					
7. Pretest adjustment	-.04	.43**	-.09	-.11	-.07	.02	—				
8. Posttest adjustment	.14	.43**	-.19*	-.10	-.05	-.06	.68**	—			
9. Pretest negative mood	.10	-.16	.18*	.03	.08	.05	-.23*	-.17	—		
10. Posttest negative mood	-.08	-.14	.16	-.07	.10	-.03	-.24*	-.28**	.48**	—	
11. Fall semester GPA	.04	.05	.18*	.34**	-.06	.05	.22*	.13	-.13	-.07	—

*Note.*  $N = 122$ . SAT = Scholastic Aptitude Test; GPA = grade point average.

<sup>a</sup>For gender, women were assigned the higher score. <sup>b</sup>Change in clinic visits reflects pretest values subtracted from posttest values.

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

ship. All participants in the control condition focused on the assigned topics and avoided meaningful disclosure of conflicts.

Preliminary analyses of the pretest measures revealed no significant differences between the writing conditions. Pessimists differed from optimists only in that they reported lower levels of pretest college adjustment ( $M = 29.26$ ) relative to optimists ( $M = 33.96$ ),  $F(1, 116) = 23.31$ ,  $p < .001$ , and pessimists reported relatively higher levels of negative mood compared with optimists ( $M = 8.36$  and  $M = 7.03$ , respectively),  $F(1, 116) = 4.71$ ,  $p < .05$ .

Analyses of variance (ANOVAs) of the outcome variables assessed the main and interactive effects of writing task and optimism groups, followed by planned comparisons or simple effects analyses that specifically tested the study hypotheses. For outcome variables requiring between-subjects ANOVAs (clinic visits, GPAs, and session evaluations), two sets of planned comparisons were conducted. First, the effects of each experimental writing task were assessed by individually comparing the self-regulation condition and the disclosure condition with the control condition. Second, these two comparisons were conducted within the pessimist group to test the hypothesis that the self-regulation task would produce beneficial changes for pessimists but the disclosure task would not. For outcome variables assessed with repeated measures ANOVAs (college adjustment and negative mood), interaction contrasts tested the hypotheses that the pretest–posttest changes would be more positive in the self-regulation condition relative to the control condition, particularly among pessimists. Planned comparisons and interaction contrasts were conducted by using Dunnett's test to maintain familywise error rates at a level of .05.

**Health clinic visits.** Clinic visit difference scores were assessed by using openness to experience as a covariate to reduce error variance. Its appropriateness as a covariate is indicated by its significant relationship with clinic visit difference scores,  $F(1, 115) = 6.84$ ,  $p < .01$ , by the absence of differences in openness to experience scores across the writing and optimism groups ( $F_s < 1$ ), and by parallel slopes in the relationship between openness to experience

scores and clinic visit difference scores across the experimental conditions.

Clinic visit difference scores varied significantly across the writing task groups,  $F(2, 115) = 5.21$ ,  $p < .01$ , with overall reductions in clinic visits among participants in both the self-regulation condition and the disclosure condition and a slight increase in clinic visits among those in the control condition (see Table 2). The reductions in clinic visits in the self-regulation and disclosure conditions relative to the increase in clinic visits in the control condition were statistically significant for both the self-regulation condition and the disclosure condition. The Writing Task  $\times$  Optimism Group interaction was not statistically significant; however, a planned comparison of change in clinic visits among pessimists revealed that, as predicted, the self-regulation task reduced clinic visits relative to the control task, but the disclosure task did not.

**College adjustment.** The correlation between openness to experience and college adjustment prompted the inclusion of openness to experience as a covariate in an analysis of changes in college adjustment over time. Its significance as a covariate fell short of statistical significance,  $F(1, 115) = 3.37$ ,  $p < .10$ , and its inclusion did not affect the significance of the writing task and optimism group effects; it was therefore dropped from the final analysis.

College adjustment ratings over time decreased significantly across the entire sample, with overall means falling from 31.62 at pretest to 29.84 at posttest,  $F(1, 116) = 16.83$ ,  $p < .001$ . Optimists reported greater adjustment at both pretest and posttest relative to pessimists,  $F(1, 116) = 14.11$ ,  $p < .0001$ , although these groups reported equivalent changes in adjustment scores over time.

Changes in college adjustment scores varied significantly across the writing conditions,  $F(2, 116) = 4.93$ ,  $p < .01$  (see Table 3), with scores decreasing in both the control condition,  $F(1, 38) = 5.25$ ,  $p < .05$ , and the disclosure condition,  $F(1, 40) = 21.70$ ,  $p < .001$ , but remaining stable in the self-regulation condition ( $F < 1$ ). The planned comparison of changes in scores in the self-regulation condition with those in the control condition failed to reach statistical significance ( $p < .12$ ). Instead, a post hoc analysis revealed

Table 2  
Means (and Standard Errors) of Pretest Clinic Visits and Change in Clinic Visits for Participants by Writing Task and Optimism Group Conditions

Visit	Self-regulation <sup>a</sup> task		Disclosure <sup>a</sup> task		Control task	
	Pessimists <sup>b</sup> ( <i>n</i> = 20)	Optimists ( <i>n</i> = 22)	Pessimists ( <i>n</i> = 23)	Optimists ( <i>n</i> = 18)	Pessimists ( <i>n</i> = 19)	Optimists ( <i>n</i> = 20)
Pretest						
<i>M</i>	0.80	0.90	0.61	0.89	0.58	0.36
<i>SE</i>	0.19	0.18	0.18	0.20	0.20	0.19
Change <sup>c</sup>						
<i>M</i>	-0.54	-0.44	-0.16	-0.62	0.20	0.07
<i>SE</i>	0.21	0.20	0.19	0.22	0.21	0.21

<sup>a</sup>Difference in change in clinic visits between participants in the experimental condition and participants in the control condition is significant ( $p < .05$ , Dunnett's test). <sup>b</sup>Difference in change in clinic visits between pessimists in the experimental condition and pessimists in control condition is significant ( $p < .05$ , Dunnett's test). <sup>c</sup>Negative values reflect a decrease in clinic visits from pretest to posttest. Means are adjusted for openness to experience.

**Table 3**  
*Writing Task Condition Means of College Adjustment, Negative Mood, and GPAs*

Measure	Self-regulation task (n = 42)	Disclosure task (n = 40)	Control task (n = 39)
<b>College adjustment<sup>a</sup></b>			
Pretest			
M	30.29	33.27	31.31
SD	5.30	5.75	6.38
Posttest			
M	30.17	29.80	29.51
SD	5.84	6.42	6.75
<b>Negative mood<sup>b</sup></b>			
Pretest			
M	7.78	8.36	6.73
SD	3.17	3.91	3.01
Posttest			
M	7.89	9.49	9.28
SD	3.84	4.90	4.45
<b>GPA<sup>c</sup></b>			
M	2.54	2.99	2.68
SD	0.65	0.53	0.60

Note. GPA = grade point average.

<sup>a</sup>Self-regulation condition differed from control and disclosure conditions in pretest–posttest change ( $p < .05$ , Scheffe's test). <sup>b</sup>Self-regulation condition differed from control condition in pretest–posttest change ( $p < .05$ , Dunnett's test). <sup>c</sup>Difference between disclosure condition and control condition is significant ( $p < .05$ , Dunnett's test).

that the writing task effect on changes in scores was due to a difference between the self-regulation condition and a combination of the disclosure and control conditions,  $F(1, 116) = 7.62, p < .05$  (Scheffe's test). The absence of a Writing Task  $\times$  Optimism Group interaction effect and interaction contrast effects indicated that the self-regulation task effect on college adjustment was equivalent for pessimistic and optimistic participants.

**Negative mood.** Analyses of pretest–posttest changes in negative mood ratings initially included openness to experience as a covariate. However, it was dropped from the final analysis because it failed to reach statistical significance,  $F(1, 115) = 3.55, p < .10$ , and its inclusion did not affect the significance of the writing task and optimism group effects.

Negative mood ratings generally increased from pretest to posttest,  $F(1, 116) = 11.75, p < .001$ . As predicted, changes in negative mood over time varied across the writing conditions,  $F(2, 116) = 3.27, p < .05$  (see Table 3). Negative mood ratings increased over time for control condition participants,  $F(1, 38) = 15.28, p < .0001$ ; negative mood also tended to increase over time for disclosure task participants, although this effect was not statistically significant,  $F(1, 40) = 3.15, p < .10$ . In contrast, negative mood ratings remained stable for those completing the self-regulation task ( $F < 1$ ). Comparisons of the changes in negative mood ratings across conditions revealed that negative mood increased significantly more in the control condition in relation to the self-regulation condition but not in relation to the disclosure condition. As indicated by a nonsignificant Writing Task  $\times$  Optimism Group interaction, the inhibition of increases in negative mood associated with

the self-regulation task was equivalent for pessimistic and optimistic participants.

**Perceived effectiveness of writing tasks.** Assessments of the postexperimental evaluations revealed significant writing task effects on all 6 items (see Table 4). Both the disclosure task and the self-regulation task were rated as more effective than the control task in promoting revelations of personal and emotional aspects of oneself, evoking strong emotions, and eliciting descriptions of issues that participants continued to think about after the sessions. Both the self-regulation task sessions and the disclosure task sessions were also perceived as more valuable and meaningful in relation to the control sessions. However, only the self-regulation task was rated as more effective than the control task in enabling participants to deal effectively with the problems and challenges of coming to college and to feel that they had control over them. There were no optimism group differences or Writing Task  $\times$  Optimism Group interaction effects on evaluation ratings.

**GPA.** An analysis of covariance of GPAs included SAT scores as a covariate to reduce error variance,  $F(1, 115) = 13.99, p < .001$ . GPAs varied significantly across the writing conditions, with disclosure condition participants achieving higher GPAs relative to the self-regulation and control condition participants,  $F(2, 115) = 5.66, p < .01$  (see Table

**Table 4**  
*Writing Task Condition Means (and Standard Deviations) of Writing Task Effectiveness Ratings*

Item	Self-regulation task (n = 42)	Disclosure task (n = 40)	Control task (n = 39)
Revealed personal or emotional aspects of yourself in your writing			
M	5.35 <sub>a</sub>	5.75 <sub>a</sub>	3.21 <sub>b</sub>
SD	1.67	1.49	1.34
Sessions made you experience strong emotions			
M	4.18 <sub>a</sub>	4.38 <sub>a</sub>	2.94 <sub>b</sub>
SD	1.62	1.79	1.48
Thought about issues written about during sessions			
M	4.95 <sub>a</sub>	5.37 <sub>a</sub>	3.91 <sub>b</sub>
SD	1.40	1.23	1.35
Sessions were a valuable and meaningful experience			
M	4.05 <sub>a</sub>	4.28 <sub>a</sub>	3.00 <sub>b</sub>
SD	1.24	1.40	1.50
More control over problems with coming to college after sessions			
M	4.18 <sub>a</sub>	3.45	3.03 <sub>b</sub>
SD	1.57	1.62	1.55
Sessions helped you deal effectively with problems and challenges			
M	3.80 <sub>a</sub>	3.48	2.79 <sub>b</sub>
SD	1.57	1.77	1.54

Note. Means in the same row that do not share subscripts differ at  $p < .05$ , Dunnett's test.

3). GPAs did not vary across optimism groups, and the Writing Task  $\times$  Optimism Group interaction was not significant.

### Discussion

Self-regulation theory proposes that writing about stressful experiences will facilitate adjustment when such writing promotes the development of coherent representations that enhance understanding and prompt effective coping. Writings tasks that enhance these self-regulation processes should foster adjustment to major life transitions, such as beginning college, as reflected in outcome measures of mood, performance of social and work-related tasks, and seeking medical care for illness concerns.

Significant benefits in such indexes of adjustment were reported by first-semester college students who participated in either a disclosure writing task, during which students explored their thoughts and feelings about entering college, or a self-regulation writing task, during which students disclosed their thoughts and feelings about college-related problems and then specified and appraised their coping plans. Both writing tasks led to greater reductions in health clinic visits compared with a control writing task, and students rated both tasks as more valuable and meaningful and more effective in eliciting strong emotions and in prompting consideration of personal issues in relation to the control task.

The self-regulation task (compared with the control task) induced several significant differences in measures of psychosocial adjustment that the disclosure task did not. First, students who used the self-regulation task reported constant levels of college adjustment and negative mood from pretest to posttest, whereas students completing the disclosure and control tasks reported significant decrements in college adjustment as well as increases in negative mood. Second, only the participants completing the self-regulation task reported enhanced perceptions of control over college-related problems in relation to those completing the control task. Third, the self-regulation task reduced clinic visits for pessimistic students relative to the control task, whereas the disclosure task did not.

These differences in writing task effects appear to be attributable to the additional focus on coping and appraisal efforts regarding specific problems and challenges evoked by the self-regulation task. This additional guidance to engage in effective coping and self-regulation may be especially beneficial for pessimistic individuals, given that they demonstrated a reduction in clinic visits, decreased negative mood, and increased college adjustment after participating in the self-regulation task but exhibited none of these benefits after participating in the disclosure task. It is likely that these individuals do not benefit as much from only disclosing their thoughts and feelings about a stressful experience because, unlike more optimistic individuals, such an exercise may not move them from dwelling on the negative aspects of the experience to delineating specific coping plans.

Students in the disclosure condition earned higher fall

semester GPAs in relation to those of participants in the control condition, whereas there was no difference between GPAs of participants in the self-regulation and control conditions. One possible explanation for this difference in writing task effects on academic performance is suggested by a content analysis of the coping strategies listed by students in the self-regulation condition in the coping segment of the self-regulation task. The most frequently listed strategies were aimed at improving social relationships and increasing participation in social activities (42%), whereas only 23% of coping efforts focused on improving academic performance (many of which were vague declarations to 'study more and get better grades' rather than specific strategies, such as obtaining a tutor or altering study habits). The self-regulation task may have facilitated coping with social problems, but their improved social lives may have been detrimental to their academic pursuits.

The present results replicate previous findings regarding the efficacy of the disclosure task in reducing illness-related clinic visits, improving GPAs, and garnering high ratings of task value among college students (Pennebaker et al., 1990; Pennebaker & Francis, 1996). The present study, which used different time frames for the writing sessions and assessments and used self-reported clinic visits rather than clinic records, contributes to the growing body of evidence supporting the generalizability of the effects of disclosure through writing (cf. Pennebaker, 1995). The absence of any beneficial effects of the disclosure task on mood or college adjustment is also consistent with previous research, in which negative mood has been found to increase following the disclosure task (Francis & Pennebaker, 1992; Murray, Lammn, & Carver, 1989), and poorer mood and adjustment have been found to persist for up to several months after the disclosure task (Pennebaker et al., 1990). The present results suggest that combining the disclosure task with prompts to develop and initiate coping plans for resolving conflicts may hasten mood repair and adjustment.

### Study Limitations

Several limitations of the present study point to directions for further research on the effects of self-regulation writing manipulations. First, with the exception of GPAs, the outcome measures were self-reported and consequently subject to potential biases associated with social desirability concerns and, regarding clinic visits, errors in recall. These biases may not have had confounding influences on the observed differences given that they should have had equivalent effects across the experimental conditions and that clinic visits during the previous month are sufficiently salient to minimize errors in recall. However, it is possible that the problem-solving focus of the self-regulation task may have biased students toward reports of experiencing fewer problems in college adjustment, better mood, and more control in handling problems. These potential demand characteristics may have been minimized by the 4-week delay in completing the posttest measures as well as the purported emphasis of the study (repeated at each encounter with participants) on learning about students' experiences

and not on fostering adjustment; nevertheless, additional studies using more objective indexes to assess the effects of the self-regulation writing task are clearly warranted.

A second limitation is the use of a relatively short time frame for assessing changes in health care visits. The 1-month time frame was selected on the basis of evidence from studies using comparably healthy populations that the disclosure task has the greatest impact on clinic visits and other health-related outcomes during the initial month following participation, with diminishing effects for the subsequent 2–4 months (Francis & Pennebaker, 1992; Pennebaker et al., 1990). Further research is needed to assess the duration of the self-regulation task's effects. Moreover, the use of three 20-min sessions constitutes a weak manipulation, and more long-lasting effects of both the disclosure task and the self-regulation task may be obtained with more extensive interventions, although this possibility remains to be empirically tested.

Finally, although the present findings reveal significant writing task effects on care seeking, the reasons for these effects remain to be determined. Seeking medical care can be motivated by multiple factors, including symptoms due to illnesses (which may or may not be exacerbated by distress), benign symptoms (which may or may not be generated by distress), perceptions of symptoms as threatening or severe, appraisals that one cannot cope with ailments, or even motivations to reduce general distress itself (Cameron et al., 1993, 1995). Further research, ideally using populations with a wider range of health statuses than those used in the past and present studies, is needed to determine the extent to which writing influences these or other factors motivating care-seeking behavior.

### Conclusion

To conclude, these findings suggest that a writing task aimed at guiding the participant through the self-regulatory stages of coping with stressors may promote adjustment to stressful experiences such as entering college, particularly for pessimistic individuals and others who experience difficulties in formulating coping plans. Efforts to tailor writing tasks to accommodate difficulties experienced by particular populations may enhance the therapeutic effects of disclosure through writing, and these efforts may benefit from the guidance provided by self-regulation theory. Further research in which the self-regulation task is used to promote adjustment to other types of stressors will broaden our understanding of its efficacy and the benefits of writing in general.

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