

The Efficacy of Problem-Focused and Emotional Approach Interventions Varies as a Function of Emotional Processing Style

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Abstract This study examined whether individual differences in emotional processing style (e.g., attention to and clarity of emotions) moderated the effectiveness of emotional approach and problem-focused interventions. Forty-one college freshmen were randomly assigned to one of two adjustment-to-college interventions: (a) an emotional approach intervention in which participants described their feelings, the sources of these feelings, and were provided with feedback about their feelings; or (b) a problem-focused intervention in which participants discussed how to solve their problems. Positive affect, negative affect, and anhedonic depression were measured before the intervention and 2 weeks subsequent to the intervention. Dimensions of emotional processing style were assessed using self-report. Participants low in attention to emotions benefited more from the emotional approach intervention, whereas those high in attention benefited more from the problem-focused intervention.

Keywords Coping · Emotion · Stress · Problem-focused · Emotional processing style

Introduction

Stress has been associated with numerous negative outcomes, including psychopathology, decreased relationship satisfaction, and physical illness (e.g., Cohen, Underwood, & Gottlieb, 2000; Cohen & Wills, 1985; House, Landis, & Umberson, 1988). Accumulated evidence suggests that coping plays an important mediating role between antecedent stressful events and outcomes such as anxiety and depression (Coyne,

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Aldwin, & Lazarus, 1981; Folkman & Moskowitz, 2000). For example, research has consistently found an association between avoidant coping or maladaptive coping and a variety of psychopathological and medical conditions (Billings, Folkman, Acree, & Moskowitz, 2000; Revenson & Felton, 1989). Coping can be defined as a response to environmental and psychological demands in particular stressful situations (Lazarus & Folkman, 1984).

Coping researchers often distinguish between emotion-focused coping and problem-focused coping (Endler & Parker, 1990). Problem-focused coping involves attempting to change the problem or make it less stressful, and typically includes making efforts to generate options to solve the problem, evaluating the pros and cons of different options, and implementing steps to solve the problem (D’Zurilla & Chang, 1995; Nezu & Nezu, 1991). Emotion-focused coping is usually defined as efforts to alleviate negative emotions surrounding the situation (Lazarus & Folkman, 1984).

As pointed out by Stanton, Danoff-Burg, Cameron, and Ellis (1994), the predominant view in the stress and coping literature is that emotion-focused coping processes are maladaptive. Emotion-focused coping has often been conceptualized as a weak alternative to problem-focused coping (Stanton et al., 1994). Although data seem to suggest that emotion-focused coping can be ineffective, there are several reasons to be skeptical of the existing research. The range of emotion-focused strategies is diverse and includes: (a) avoidant strategies such as denial and disengagement; and (b) approach strategies such as positive reinterpretation of events and seeking out social support. When these distinct qualities of emotion-focused coping are aggregated, the association between emotion-focused coping and maladaptive outcome becomes dubious (Stanton et al., 1994). Second, many items on emotion-focused coping scales, such as “I become very tense” or “I get upset and let my emotions out,” appear to confound coping efforts with distress (Stanton, Kirk, Cameron, & Danoff-Burg, 2000). Third, negative outcomes are also often attributed to emotion-focused coping because of the correlational nature of the data inherent in the use of cross-sectional designs (Coyne & Racioppo, 2000).

Because the aggregated use of both approach and avoidant emotion-focused coping methods makes the term “emotion-focused” ambiguous and potentially misleading, we will be focusing on a particular subset of emotion-focused strategies that we refer to as emotional approach coping. We define emotional approach coping as actively identifying, processing, and expressing one’s emotions. We conceptualize emotions as providing information about one’s goal status (Clore et al., 1998) and also creating different problem-solving perspectives (Salovey, Bedell, Detweiler, & Mayer, 1999). The functional qualities of emotions has led to a fundamental tenet in our research—that emotions can serve an adaptive role in the coping process.

Because of some of the inadequacies of previous cross-sectional research examining the influence of emotional approach coping, we conducted a study to elucidate for whom and under what circumstances emotional approach coping and problem-focused coping are differentially more effective (Baker & Berenbaum, 2007). Our previous study was influenced by research findings that certain individual difference variables affect the success of people engaging in various coping strategies (Gohm & Clore, 2000).

Accumulating evidence suggests that individuals differ in how attentive and clear they are regarding their emotions (Coffey, Berenbaum, & Kerns, 2003; Salovey, Mayer, Goldman, Turvey, & Palfai, 1995) and their ability to effectively describe their emotions (Bagby, Taylor, & Parker, 1994). Attention to emotion and clarity of emotion are important dimensions of emotional experience (e.g., Gohm & Clore, 2000, 2002). In fact, they comprise two dimensions of several related multidimensional constructs, such

as alexithymia and emotional intelligence (Coffey et al., 2003; Gohm & Clore, 2000, 2002). For example, two dimensions of alexithymia are difficulty identifying/labeling one's emotions (i.e., a lack of clarity of emotions) and an external or concrete cognitive style (which is significantly negatively correlated with attention to emotions; Coffey et al., 2003; Gohm & Clore, 2000, 2002). Further, past research (e.g., Gohm & Clore, 2000, 2002) that has explored the dimensions of emotional experience has found that attention to and clarity of emotion are distinct from other facets of emotional experience such as absorption, intensity, and emotional expression. We hypothesized that individual differences in emotional processing style (i.e., attention to and clarity of emotion) may moderate the effectiveness of emotional approach and problem-focused coping interventions. These hypotheses are consistent with the results of past research suggesting that individuals who lack mood awareness and are less emotionally open benefit more from expressive writing and other mechanisms to express their emotions than do people who are more attentive and clear about their emotions (Baker & Berenbaum, 2007; Lumley, 2004; Paez, Basabe, Valdeseda, Velasco, & Iraurgi, 1995; Paez, Velasco, & Gonzalez, 1999; Salovey et al., 1999).

In our previous study (Baker & Berenbaum, 2007), undergraduate participants described a recent stressful event, completed a mood measure [assessing both positive (PA) and negative affects (NA)], completed measures of emotional processing style, and were randomly assigned to one of two conditions: (a) emotional approach coping; or (b) problem-focused coping. In a paradigm based upon the disclosure work of Pennebaker (e.g., Park & Blumberg, 2002; Pennebaker & Francis, 1996), in the emotional approach coping condition participants spent 15 min writing about their particular feelings (including the source of those feelings) regarding the stressful event, whereas in the problem-focused coping condition, participants spent 15 min writing in an attempt to solve their problem. Participants returned 2 weeks later and again completed the mood measure. We found that individuals who were less attentive and less clear about their emotions had higher levels of PA if they engaged in emotional approach coping rather than problem-focused coping. Conversely, we found that individuals attentive and clear about their emotions had higher levels of PA if they engaged in problem-focused coping rather than emotional approach coping.

In the current study we asked the same fundamental question—for whom and under what circumstances are problem-focused and emotional approach coping interventions differentially more effective. The current study differs from our first study in several fundamental ways. First, the participants in the current study were all undergoing the same common stressful event (the transition to college) rather than a variety of different stressors. Second, whereas in our first study participants coped using a 15-min writing exercise, in the present study participants were provided with brief problem-focused or emotional approach coping interventions (in the form of small group, 2-h interventions with an intervention leader). Third, in addition to measuring mood, we also included a measure of psychopathology. In our first study, we found that emotional processing style interacted with the assigned coping strategy to specifically predict PA rather than NA. Since researchers have found that both loss of interest (e.g., anhedonia, disinterest, and low energy) and deficits in positive emotional experiences or PA (e.g., cheerful, optimistic, felt good about self) are central to major depressive disorder (e.g., Watson, Clark, & Carey, 1988; Watson et al., 1995), the results of our past research suggest that the interaction between emotional processing style and coping strategy may be particularly relevant to depressive disorder. Therefore, we chose to use a measure of anhedonic depression which reflects those features of depressive disorder most strongly

associated with PA. One of the essential features of anhedonic depression is a deficit in PA (Watson & Clark, 1991), whereas NA correlates significantly with most symptoms of anxiety and depression. Past research has demonstrated that anhedonic depression is distinguishable from other facets of psychological distress such as anxious arousal (e.g., Nitschke, Heller, Imig, McDonald, & Miller, 2001). Anhedonic depression which is defined as low PA (e.g., “felt like nothing was enjoyable”) is a specific feature of depression differentiating it from anxiety, whereas anxious arousal, essentially high NA, (e.g., “felt dizzy”) is a specific feature of anxiety differentiating it from depression (Watson & Clark, 1991).

In the present study we employed interventions with a workshop leader rather than writing exercises so that our research might be more pertinent to understanding professional therapeutic interventions. We based much of our emotional approach intervention on the work of Greenberg (e.g., Greenberg, 2002; Greenberg & Watson, 2006), while we based much of our problem-focused intervention on the research of the Nezu (e.g., Nezu & Nezu, 1991; Nezu, Nezu, McClure, Felgoise, & Houts, 2003; Nezu, Nezu, & Perri, 1989). Greenberg and colleagues have developed efficacious therapeutic interventions that essentially ask clients to identify their emotions and the source of their emotions (Greenberg, 2002; Safran & Greenberg, 1991), whereas Nezu et al. have developed problem-solving strategies shown to be efficacious for a broad range of psychological disorders, particularly depression (Nezu et al., 1989). One goal of the current research was to generate hypotheses concerning for whom and under what circumstances emotional approach therapy or problem-solving therapy may be differentially more effective. Although there is evidence indicating that both types of interventions are efficacious, and while the two approaches are not mutually exclusive, the current research may help illuminate why one type of therapeutic intervention should be emphasized with a particular client, or why one type of intervention should precede the other if both emotional approach and problem-solving techniques are being utilized in therapy.

We hypothesized that (1) the emotional approach intervention would be more effective for individuals who are not clear or attentive to their emotions as compared to the problem-focused intervention. Conversely, we hypothesized (2) that the problem-focused intervention rather than the emotional approach intervention would be more effective for individuals who are more clear and attentive to their emotions. Contrary to much of the previous coping literature, we hypothesized that the emotional approach intervention can be an effective strategy, specifically for individuals low in emotional processing style characteristics.

Methods

Participants

Participants who completed the study were 41 college freshmen (56% female) who were either 18 or 19 years old ($M = 18.2$, $SD = .4$). One participant of the original 42 college freshmen did not complete the study and was not included in the subsequent data analyses. Therefore, 97% of the participants completed the study. Of those participants who specified their ethnicity, the majority (80.0%) were White. In addition, 4.0% were African American, 4.0% were Latina/o, and 12.0% were Asian American.

Participants responded to a flyer asking for volunteers to engage in a 2-h workshop to help freshmen deal with the transition to college. The workshops were completed in late October, approximately 2 months after the participants first arrived on campus. The flyer indicated that the participants would be involved in a research study by engaging in the workshop and participants were told that they would be eligible to win \$100 in a lottery with their involvement in the study. The participants were recruited in various ways including: (1) flyers were placed in the Psychology Building and throughout the university; (2) the director of Residence Life contacted rectors of several undergraduate residence halls who e-mailed the flyer to their residents; (3) the flyer was e-mailed to approximately 500 students who participated in a program called First Year Impact (a volunteer program sponsored in the first few weeks of school aimed at introducing students to the challenges of university life); and (4) engineering deans e-mailed the flyer to all freshmen students. Participants completed informed consent forms that explained the nature of the study, and the experimenter also explained that the experiment may be difficult for some individuals because they would be asked to confront issues that are psychologically challenging in front of their peers. The students were told that participation was voluntary and that they could stop participating without penalty.

Materials

Emotional processing measures

Four dimensions of emotional processing style (clarity of emotions, difficulty describing emotions, ambivalence over expressing emotion, and attention to emotions) were assessed using self-report.

Clarity of emotions

The Trait-Meta Mood Scale (TMMS; Salovey et al., 1995) clarity subscale consists of 11 items (e.g., “I am usually very clear about my feelings” and “I almost always exactly know how I am feeling”). Responses are made with a 5-point scale indicating amount of agreement. Higher scores reflect greater clarity of emotions. Cronbach’s alpha was .78 in this study.

The Toronto Alexithymia Scale (TAS-20; Bagby et al., 1994) Identification subscale consists of seven items [e.g., “When I am upset, I don’t know if I am sad, frightened, or angry” (reverse scored) and “I find examination of my feelings useful in solving personal problems”]. Responses are made with a 5-point scale indicating amount of agreement. Higher scores reflect greater difficulty identifying emotions (i.e., less clarity of emotions). Cronbach’s alpha was .79 in this study.

Difficulty describing emotions

The TAS-20 Communication (TAS Comm) subscale consists of five items (e.g., “It is difficult for me to find the right words for my feelings” (reverse scored) and “I am able to describe my feelings easily”). Responses are made with a 5-point scale indicating amount of agreement. Higher scores reflect greater difficulty communicating emotions. Cronbach’s alpha was .78 in this study.

Ambivalence over emotions

The Ambivalence Over Emotional Expressiveness Questionnaire (AEQ; King & Emmons, 1990) consists of 28 items [e.g., “It is hard to find the right words to indicate to others what I am really feeling” (reverse scored) and “I’d like to talk about my problems with others, but at times I just can’t” (reverse scored)]. Responses are made with a 5-point scale indicating amount of agreement. Higher scores reflect greater ambivalence expressing emotions. Cronbach’s alpha was .86 in this study.

Clarity/communication of emotions

Consistent with past research, the four emotional processing style measures described above were all strongly correlated (absolute correlations ranged from $r = .41, p < .01$ to $r = .78, p < .001$). Therefore, a composite clarity/communication score was computed by subtracting the sum of the TAS Comm, TAS-20 Identification, and AEQ scores from the TMMS clarity score. Standardized, rather than raw, scores were used to compute this composite score. This method of computing the composite score is mathematically equivalent to averaging across standardized scores on all four instruments after first reverse scoring the TAS Comm and Identification subscales and the AEQ. Higher clarity/communication composite scores reflect greater clarity and ease of communicating emotions.

Attention to emotions

The TMMS attention subscale consists of 13 items (e.g., “I pay a lot of attention to how I feel” and “Feelings give direction to life”). Responses are made with a 5-point scale indicating amount of agreement. Cronbach’s alpha was .91 in this study.

The TAS-20 externally oriented thinking (EOT) subscale consists of eight items (e.g., “Being in touch with emotions is essential” (reverse scored) and “I prefer to watch light entertainment shows rather than psychological dramas”). Responses are made with a 5-point scale indicating amount of agreement. Cronbach’s alpha was .64 in this study.

Consistent with past research, in the current study, these two subscales were significantly correlated, $r = -.41, p < .01$, suggesting they are tapping a common construct (Coffey et al, 2003; Gohm & Clore, 2000). Therefore, a composite “Attention” score was calculated by subtracting the standardized TAS-20 EOT score from the standardized TMMS attention score. Thus, higher scores reflect greater attention to emotions.

Adjustment indices

Mood and anhedonic depression were measured using self-report.

Mood

The Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988) was administered. The PANAS consists of a 10-item PA scale, and a 10-item NA scale. The two scales contain adjectives describing different feelings and emotions (e.g., “upset”, “irritable” for NA; “excited”, “determined” for PA). The extent to which

each emotion is felt is rated using a 5-point scale. In the present study, participants were asked to describe how they had felt “in the past week.” Higher scores indicate greater amount of either PA or NA. In this study, Cronbach’s alphas were .81 and .74 for PA and NA, respectively.

Anhedonic depression

We administered the 22 anhedonic depression items (e.g., “felt really good about myself” and “felt optimistic” from the 14 item high PA subscale; “seemed to move quickly and easily” and “felt really slowed down” from the eight item loss of interest subscale) from the Mood and Anxiety Symptom Questionnaire (Watson & Clark, 1991). Participants reported the extent to which each symptom best described how they had felt “during the past week.” Higher scores indicate a greater amount of anhedonic depression experienced in the past week. In this study, Cronbach’s alpha was .93.

Severity and type of stress

Participants provided a written description of their stressful situation. Using a 1–100 dimensional scale, seven independent raters judged the severity of each participant’s stressful event. Higher scores reflect greater stress as perceived by the raters. Each participant was assigned a severity score based on the mean of the seven raters. Interrater reliability, measured using intraclass correlations, with raters treated as random effects and the mean of the raters treated as the unit of reliability, was .70. The severity scores ranged from 15.6 to 67.4, with the mean score in the moderate range ($M = 40.1$, $SD = 11.2$).

Five independent raters read participants’ written description of their stressful situations and judged them as either constituting an interpersonal stressor or an achievement stressor. All five raters agreed on all 41 of the participants’ stressors. Twenty-one participants were rated as experiencing interpersonal stressors and 20 participants were rated as having achievement stressors. The interpersonal stressors typically consisted of either problems with roommates or difficulties leaving loved ones, particularly romantic partners, whereas the achievement stressors typically consisted of either problems with time management or dealing with poor grades for the first time.

Procedure

This study was composed of two sessions. During the first session, participants provided information concerning a current stressor, completed questionnaire measures of emotional processing style, completed baseline measures of adjustment, and then participated in one of two interventions: (a) a problem-solving workshop; or (b) an emotional approach workshop.

The instructions were adapted from Dunkel-Schetter, Folkman, and Lazarus (1987) to read as follows:

Take a few moments to think about a current stressful issue that relates to the transition to college. By “stressful” we mean a situation that is difficult or troubling you, either because it upsets you or because it takes considerable effort to deal with it. By “current” we mean a situation that is stressful at this moment and also has the potential of being stressful 2 weeks from now. It may be a problem with a roommate, an academic problem like managing your time and studying, a separation from someone you care

about, living in a new environment, making new friends, etc. With this situation in mind, please answer the following questions.

Participants then answered two open-ended questions regarding the stressful event: “What happened?” and “When did it happen?”

Participants were randomly assigned to one of two interventions at Time 1. One half of the participants engaged in an “emotional approach intervention” and the other participants engaged in a “problem-focused intervention”. Each 2-h workshop consisted of approximately five to six participants and a workshop moderator (the first author).

Emotional approach intervention

In the emotional approach workshop, participants were asked to talk about their feelings regarding the stressful transitional issue. We first asked them to share with others the specific transitional issue and explain why it was stressful. We encouraged others to provide emotional support, especially as they may have found the same transitional issue to be stressful. We asked them to examine if they may be feeling a particular emotion like hope, sadness, or anger (a list of such emotions was provided). Each participant explained to others why they may feel the particular emotion. We gently encouraged participants to clarify their feeling if the reasons for a particular emotion seemed vague. At the end of the intervention we encouraged the participants to find ways to communicate their feelings about this issue. Participants were told that they could accomplish the goal of communicating their feelings through talking to others or through writing in a diary.

Problem-focused intervention

In the problem-focused intervention, participants were asked to explore ways to solve their problem or at least to make it less stressful. Each participant first shared with others the specific transitional issue. They next generated a list of potential options in dealing with the issue. Others in the group aided in the generation of options. We next asked the participants to state the pros and cons of each of the options. Again others in the group helped in explicating the pros and cons for each of the options. Finally, the participants decided on the concrete steps to make the transitional issue less stressful. At the end of the intervention we encouraged the participants to find ways to solve this problem or make it less stressful. Participants were told that solving their problem could be accomplished through talking to others or through writing in a diary.

Two weeks later (Time 2), participants returned to complete the adjustment measures (PANAS and anhedonic depression).

Results

Interscale correlations

As can be seen in Table 1, there was a moderate positive correlation between anhedonic depression and NA, a moderate negative correlation between NA and PA, and a strong negative correlation between anhedonic depression and PA (though the correlation between anhedonic depression and PA was not so high to suggest that they are measuring the identical phenomenon). There was no association between attention and

Table 1 Interscale correlations

Scales	1	2	3	4	5
Participants ($n = 41$)					
Negative affect	–	.38*	–.37*	.11	–.35*
Anhedonic depression		–	–.65**	–.10	–.52**
Positive affect			–	.15	.33*
Attention				–	.23
Clarity/communication					

* $p < .05$, two-tailed** $p < .01$, two-tailed**Table 2** Mean scores and standard deviations (in parentheses) of positive affect, negative affect, and anhedonic depression

	Emotional approach ($n = 21$)		Problem-focused ($n = 20$)	
	Pre	Post	Pre	Post
Negative affect	22.0 (6.4)	20.0 (8.9)	22.4 (4.8)	20.0 (7.7)
Anhedonic depression	50.5 (12.5)	49.8 (12.6)	57.7 (14.6)	49.4 (16.5)
Positive affect	34.4 (5.5)	34.7 (5.7)	31.3 (6.7)	35.3 (7.3)

The values were taken at baseline and 2 weeks after either emotional approach or problem-focused intervention

the various outcome measures, whereas clarity was negatively associated with NA and anhedonic depression and positively associated with PA.

Evaluation of intervention effects

To determine the effect of the intervention on the adjustment measures (PA, NA, and anhedonic depression) we conducted a series of 2 (intervention group) \times 2 (time: pre-intervention vs. postintervention) repeated measures analyses of variance.

As can be seen in Table 2, both interventions had beneficial effects. Two weeks after the intervention participants reported significantly higher levels of PA, $F(1, 39) = 6.4$, $p < .05$, significantly lower levels of anhedonic depression, $F(1, 39) = 5.2$, $p < .05$, and a trend for lower levels of NA, $F(1, 39) = 3.8$, $p < .10$. A significant group \times time interaction for PA was revealed, $F(1, 39) = 4.7$, $p < .05$, as well as a trend for a group \times time interaction for anhedonic depression $F(1, 39) = 3.7$, $p < .10$. Participants assigned to the problem-focused intervention experienced a significant increase in PA, and a comparatively greater decrease in anhedonic depression, compared to participants assigned to the emotional approach intervention.

Interactive effects of the intervention and emotional processing

We next examined whether emotional processing style variables interact with the assigned intervention to predict outcome. To do so, we conducted a series of separate hierarchical multiple regression (HMR) analyses, using the Time 2 outcome measures (i.e., PA, NA, and anhedonic depression) as the dependent variables. Time 1 mood or depression was entered into the regression equation on the first step. In each HMR analysis, two variables were entered on the second step—one of the variables was a

Table 3 Intervention \times emotional processing interactions improving the prediction of negative affect (NA), anhedonic depression, and positive affect (PA) at Time 2 (in terms of ΔR^2) controlling for NA, anhedonic depression, and PA at Time 1 ($n = 41$)

Interaction predictor	Dependent variable		
	NA	Anhedonic depression	PA
Intervention \times attention	.18***	.05****	.01
Intervention \times clarity/communication	.004	.001	.004

*** $p < .001$, two-tailed

**** $p < .10$, two-tailed

measure of individual differences in emotional processing style, and the other variable was the assigned intervention (emotional approach intervention vs. problem-focused intervention). We examined the following two individual difference variables (with each predictor being examined in separate HMR analyses): (1) attention (2) clarity/communication. On the third step we entered the interaction of the two predictors that had been entered in the second step (e.g., attention \times assigned intervention).

All scores entered into the regression equations were centered. This procedure allowed us to predict residual changes in mood and anhedonic depression scores from Time 1 to Time 2. The degree to which each of the interaction terms improved the prediction of NA, PA, and anhedonic depression at Time 2 (in terms of ΔR^2) is presented in Table 3. Each cell in Table 3 represents the interaction of the assigned intervention and another predictor variable. For example, the top left cell in Table 3 indicates that the assigned intervention \times attention interaction led to a significant increase in the prediction of NA ($\Delta R^2 = .18$), whereas the bottom right cell in Table 3 indicates that the assigned intervention \times clarity/communication interaction led to a non-significant increase in the prediction of PA ($\Delta R^2 = .004$). Details concerning the regression analyses involving attention to emotion and NA and anhedonic depression (the two analyses that provided evidence of interactions between assigned intervention and emotional processing style) are presented in Tables 4 and 5.

There was evidence of attention to emotions interacting with the assigned intervention to predict NA and anhedonic depression. In order to interpret the interactions, we computed predicted values using unstandardized beta weights and 1.0 and -1.0 standard deviation values to predict high and low scores (Cohen & Cohen, 1983). These interactions are displayed in Fig. 1. Participants who were not attentive to their emotions benefited more (at least with regard to having lower levels of NA) from the emotional approach intervention than from the problem-focused intervention. In contrast, participants who were attentive to their emotions benefited more (with regard to having lower levels of both NA and anhedonic depression) from the problem-focused intervention than from the emotional approach intervention.¹

¹ To rule out the possibility that some of the findings described above (e.g., the interaction between attention and the assigned interventions) were merely artifacts of either the severity or the type (interpersonal or achievement) of the stressors individuals faced, we repeated all of the preceding HMR analyses entering the severity or type of stressor in the first step. All of the interactions that were statistically significant in the original analyses remained statistically significant when entering objectively rated stressor severity or type in the first step.

Table 4 Summary of hierarchical regression analysis predicting negative affect (NA) at Time 2 from NA at Time 1, attention, assigned intervention, and the interaction of assigned intervention \times attention ($n = 41$)

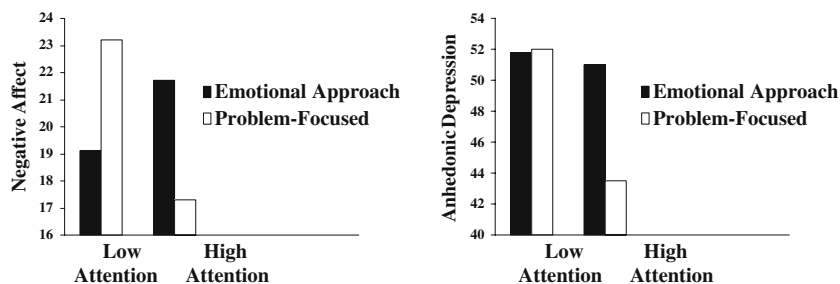
Variable	<i>B</i>	SE	β	R^2	ΔR^2
Step 1				.27	
NA at Time 1	.76	.20	.52		
Step 2				.29	.02
NA at Time 1	.78	.20	.54		
Attention	.70	.69	-.14		
Assigned intervention	.03	2.30	-.002		
Step 3				.47	.18***
NA at Time 1	.77	.18	.53		
Attention	1.30	.83	.27		
Assigned intervention	-.19	1.98	.10		
Assigned intervention \times attention	-4.22	1.20	-.59		

*** $p < .001$, two-tailed

Table 5 Summary of hierarchical regression analysis predicting anhedonic depression at Time 2 from anhedonic depression at Time 1, attention, assigned intervention, and the interaction of assigned intervention \times attention ($n = 41$)

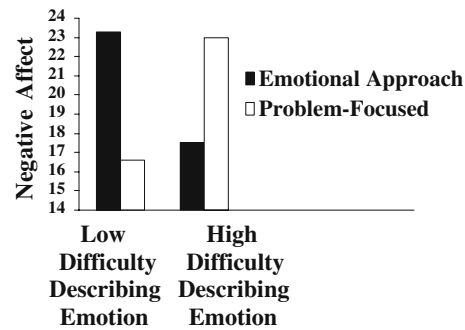
Variable	<i>B</i>	SE	β	R^2	ΔR^2
Step 1				.34	
Anhedonic depression at Time 1	.61	.14	.58		
Step 2				.43	.09*
Anhedonic depression at Time 1	.62	.14	.59		
Attention	-2.17	1.10	-.25		
Assigned intervention	-3.72	3.76	-.13		
Step 3				.48	.05*
Anhedonic depression at Time 1	.59	.13	.56		
Attention	-.40	1.46	-.05		
Assigned intervention	-3.63	3.65	-.13		
Assigned intervention \times attention	-3.82	2.15	-.30		

* $p < .10$, two-tailed

**Fig. 1** Interactions of assigned intervention \times attention predicting negative affect (*left*), assigned intervention \times attention predicting anhedonic depression (*right*)

We did not find a significant assigned intervention \times clarity/communication interaction as hypothesized. Therefore, we conducted exploratory post hoc HMRs examining separately each of the four components of the composite clarity/communication

Fig. 2 Interaction of assigned intervention \times difficulty communicating emotions predicting negative affect



measure (TMMS clarity, TAS-20 Identification, TAS Comm, AEQ). We found a significant ($p < .05$) assigned coping \times TAS Comm interaction. This interaction is displayed in Fig. 2. Participants who had difficulty communicating their emotions had lower levels of NA if they engaged in the emotional approach intervention than if they engaged in the problem-focused intervention. In contrast, participants who did not have difficulty communicating their emotions had lower levels of NA if they engaged in the problem-focused intervention than if they engaged in the emotional approach intervention. We did not find any significant interactions involving the remaining components of the composite clarity/communication measure.

Discussion

We found that individual differences in emotional processing style, specifically attention to emotions, moderated the effectiveness of the emotional approach and problem-focused interventions. We found that individuals who are not attentive to their emotions had better outcomes, specifically lower NA and anhedonic depression, if they engaged in the emotional approach interventions. This finding is consistent with past research indicating that people with deficits in emotional processing style will gain greater benefits from expressing their emotions to others or writing about their emotions than others who are more attentive or clear about their emotions (Baker & Berenbaum, 2007; Paez et al., 1995; Salovey et al., 1999; Smyth, 1998).

We think there are at least three reasons why individuals who are not attentive to their emotions had better outcomes if they engaged in the emotional approach intervention. One possible explanation is that identifying and communicating one's emotions may provide information which could then be utilized to solve the problem. Since the emotional approach intervention took place in a social context, with the assistance of a workshop leader, it seems plausible that feedback concerning what participants were feeling and why may have created different problem-solving perspectives that could be useful to eventually solve the problem. A second possible explanation is that the emotional approach intervention may have enabled individuals to find meaning in the event and avoid intrusive ruminative processing (Lugendorf & Antoni, 1999). The third possible explanation concerns the immediate social consequences of participating in the emotional approach intervention. The participants in the group were able to acknowledge each others' emotions, empathize with each others' situations, and consequently could provide effective social support, which could have

directly affected participants' moods. Recent research has found that individuals who are not attentive and who have difficulty communicating their emotions will more successfully utilize emotional approach coping interventions if they are in a supportive environment (Langens & Schuler, 2005; Lumley, 2004).

Individuals who are not attentive to their emotions had higher levels of NA and anhedonic depression if assigned to the problem-focused intervention. It is plausible that such individuals could not effectively communicate to the others in the group their precise problem, and consequently their peers had difficulty providing guidance in order to make their problem less stressful.

Participants attentive to their emotions had lower levels of NA and anhedonic depression if assigned to the problem-focused intervention rather than the emotional approach intervention. Those individuals who are typically attentive to their emotions will be able to receive effective advice from their peers because the other individuals in the group will be more apt to truly understand the problem (Gohm & Clore, 2002).

Participants who were attentive to their emotions had higher levels of NA and anhedonic depression if assigned to the emotional approach intervention. We hypothesize that individuals attentive to their emotions usually do not have much to gain from spending more time identifying and expressing their emotions to others. Individuals already attentive to their emotions may have become overly vigilant regarding their emotions if assigned to the emotional approach intervention. We posit that such hypervigilance in one's emotions may lead to rumination and an increase in NA (Nolen-Hoeksema, Parker, & Larson, 1994; Treynor, Gonzalez, & Nolen-Hoeksema, 2003).

Unlike NA and anhedonic depression, there was no evidence of emotional processing style interacting with the interventions to predict PA. Because PA and NA are relatively independent constructs, and because at least some of their psychological and neurological substrates differ, it is not surprising that our pattern of findings varied as a function of the outcome measures (Feldman Barrett, Gross, Christensen, & Benvenuto, 2001; Watson et al., 1988). In Baker and Berenbaum (2007), we found that the interaction of emotional approach and problem-focused coping with emotional processing style variables specifically predicted PA and not NA, whereas in our current study the intervention interacted with emotional processing style to predict NA, anhedonic depression, and not PA. The results of both of our studies indicate that the emotional approach intervention is most beneficial for individuals who are not attentive to their emotions, whereas the problem-focused intervention is most beneficial for individuals who are more attentive about their emotions. What varies across the two studies is the specific outcome measures for which individual differences interact with coping strategies.

Research suggests that different coping strategies have differential effects on different outcomes (Billings et al., 2000). There is some support for PA, rather than NA, being uniquely associated with active coping strategies such as problem-focused coping (e.g., Baker & Berenbaum, 2007; Moskowitz, Folkman, Collette, & Vittinghoff, 1996). In the current study, the participants did engage in active coping efforts, and while we did expect a significant change in PA, there is one crucial difference between the current study and Baker and Berenbaum (2007). In our current study the participants disclosed their problem to others, rather than coping alone. There is some evidence suggesting that disclosing one's problems to others may result solely in a decrease in NA (Lutgendorf & Antoni, 1999). There is clearly a need for further research to examine

the myriad of contextual factors that may influence the association of various coping strategies with PA, NA, measures of psychopathology, and measures of health.

Although our interventions drew from the seminal work of Greenberg (2002) and Nezu & Nezu (1991), these workshops can hardly be assumed to be comprehensive interventions appropriate for individuals with significant psychopathology. Nonetheless, one potential implication of our research is that emotional processing style may moderate the success of therapeutic interventions. The results of our research reveal an interesting paradox—those individuals who are apt not to engage in emotional approach coping are most likely to show the most improvement if they identify and communicate their emotions.

Our finding that it was those individuals who had difficulty communicating their emotions (rather than those who were simply unclear about their emotions) were especially likely to benefit from the emotional approach intervention is not entirely surprising given several other research findings. Two other published research studies found that participants with higher scores on the TAS-20 Difficulty Communicating Emotions subscale, who discussed their stressful event in a diary method, had improved psychological functioning (Paez et al., 1999; Salano, Donati, Pecci, Persichetti, & Colaci, 2003). These researchers found that it was specifically the TAS Comm subscale, not the TAS-20 Identification scale, that predicted improved functioning. We hypothesize that when attempting to cope with stressors in an interpersonal context (e.g., when discussing a stressor with a friend or therapist), the ability to communicate emotions will be particularly important. In contrast, we posit that in such contexts, clarity of emotions will only be important to the extent that it facilitates or impedes the communication of emotion. Lumley (2004) hypothesized that participants who had difficulty actually identifying their emotions had problems benefiting from disclosure because they had difficulty with the initial step of labeling their emotions. Our findings are also consistent with past research that found that individuals who had some difficulty communicating their emotions benefited from emotional coping interventions but only if they communicated their emotions to others in a supportive rather than a punishing environment (Langens & Schuler, 2005; Lumley, 2004). This raises the possibility that identifying and expressing one's emotions in therapy, specifically in a context that is typically supportive like the workshops in the current study, may be particularly useful for individuals who are not attentive to their emotions or have difficulty communicating their emotions. We recognize that the results of our exploratory post hoc HMRs separately examining each of the four components of the composite clarity/communication need to be interpreted with caution due to the attendant problems of disentangling a composite variable. It will be important for future research to replicate our finding that individuals with difficulty communicating emotions, rather than those who simply have problems identifying emotions, benefit from emotional approach interventions.

Although problem-solving therapies have been found to be very useful for certain mental health problems, particularly depression (Nezu & Nezu, 1991), our findings suggest that such therapies may not be as effective if the client cannot identify his/her feelings and does not understand the source of those feelings. It should be noted that efficacious problem-solving therapy (e.g., Nezu & Nezu, 1991) does attempt to identify the clients' particular emotions. We also found that the emotional approach intervention did not particularly benefit individuals who were already attentive to their emotions, raising the possibility that emotion-focused therapies may not be indicated for such individuals, or at the very least may need to be delivered with caution.

We recognize that the suggested implications we have just described are rather qualified because our participants were college students without significant psychopathology, who experienced fairly mild stressors, and who were randomly assigned to 2-h interventions rather than comprehensive emotional approach or problem-solving therapies. Our sample was also rather biased as we did not recruit participants from a psychology 100 subject pool, but rather the participants volunteered because they reported dealing with the stress of transitioning to college. Therefore, our findings may not necessarily generalize to all college students, but should generalize to college students reporting similar stressors. Furthermore, although we have stated that participants reported significantly higher levels of PA and lower levels of anhedonic depression after both interventions, without the use of a control group we cannot be confident that the changes were due to the interventions since they could also reflect time or maturity effects. Regardless of the previous qualifications and limitations, since several studies, including but not limited to the present study (e.g., Gohm & Clore, 2000) have now demonstrated that the success of different interventions is moderated by individual differences in emotional processing style, we believe it is likely that the efficacy of therapies in which problem-focused coping or emotional approach coping play prominent roles will also be found to be moderated by individual differences in emotional processing style; we look forward to research that directly tests these hypotheses.

It will be valuable for future research to replicate our study using different populations, as well as with groups undergoing severe stressors. For example, instead of examining college students undergoing the transition to college, one could examine adults undergoing the transition to retirement or patients dealing with the diagnosis of cancer. Because most of the current research involving coping utilizes predominantly European–American participants, it will be useful to examine the effectiveness of emotional approach and problem-focused interventions with participants from other ethnic groups. Finally, it will be valuable for researchers to examine the effectiveness of various coping strategies not just as employed by individuals coping alone (e.g., in a diary) or by relative strangers in a group, but in a more naturalistic way. Such a naturalistic method may entail examining how close friends, spouses, or partners cope and examining why they choose various coping strategies. In Baker and Berenbaum (2007) and the current study, participants coped in a supportive context. Future research should examine how an unsupportive context might influence coping choice and coping effectiveness. It is quite plausible an unsupportive context (e.g., a critical partner) may also moderate the choice and effectiveness of emotional and problem-focused coping. We are optimistic that additional research that builds upon the findings of the present study will elucidate the myriad of factors that contribute to the effectiveness and choice of particular coping strategies, as well as the relative efficacy of alternative coping-focused therapies for different kinds of clients.

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