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SEX DIFFERENCES IN THE USE OF COPING STRATEGIES: PREDICTORS OF ANXIETY AND DEPRESSIVE SYMPTOMS

Megan M. Kelly, Ph.D.[1,2,*], **Audrey R. Tyrka, M.D., Ph.D.**[1,2], **Lawrence H. Price, M.D.**[1,2], and **Linda L. Carpenter, M.D.**[1,2]

[1]Mood Disorders Research Program and Laboratory for Clinical Neuroscience, Butler Hospital, Providence, Rhode Island [2]Department of Psychiatry and Human Behavior, Brown Medical School, Providence, Rhode Island

Abstract

This study examined sex differences in the use of coping strategies and their relationship to depression and anxiety-related psychopathology. Responses on measures of coping strategies, depression, and anxiety were obtained from a carefully screened nonclinical sample (N =107). The results demonstrated that women who used less positive reframing had higher levels of depressive symptoms compared with women who used more positive reframing and to men irrespective of their use of more or less positive reframing. In addition, women who reported the use of more self-blame had elevated levels of trait anxiety, although a similar effect was not found for men. The observed sex differences in the use of coping strategies and their association with depression and anxiety-related problems underscores differences in the clinical presentation of anxiety and depression between women and men.

Keywords

coping; depression; anxiety; sex differences; emotion regulation

INTRODUCTION

Findings from epidemiological studies have repeatedly shown a higher prevalence of anxiety and depression diagnoses in women compared with men. These studies indicate that the female-to-male ratio is approximately 2:1 or greater for several anxiety disorders (i.e., panic disorder, agoraphobia without panic disorder, specific phobias, generalized anxiety disorder) and for major depression [Gater et al., 1998; Kessler et al., 1994; Weissman et al., 1996]. Several accounts of sex differences in depression and anxiety maintain that differences in how women and men respond to stress may be an underlying mechanism that contributes to observed sex differences in the development and clinical presentation of anxiety and

[*]Correspondence to: Megan M. Kelly, Ph.D., National Center for PTSD (116B-5), VA Boston Healthcare System, 150 S. Huntington Ave, Boston, MA 02130. Megan.Kelly@va.gov.

Megan M. Kelly is now at the National Center for PTSD, VA Boston Healthcare System.

depressive disorders [Craske, 2003; Hammen, 2005]. More specifically, robust research findings suggest that sex differences in the use of coping styles in response to stress are salient and contributing factors in the pathogenesis of anxiety and depression in women [Barlow, 2001; Nolen-Hoeksema et al., 1999].

Coping has been described as an individual's attempts to use cognitive and behavioral strategies to manage and regulate pressures, demands and emotions in response to stress [Folkman and Lazarus, 1980; Folkman et al., 1986; Lazarus and Folkman, 1984; Monat and Lazarus, 1991]. Two categories of coping behavior have often been referred to in the literature: problem-focused and emotion-focused coping [Billings and Moos, 1984; Compas et al., 1993; Folkman and Lazarus, 1980; Lazarus and Folkman, 1984]. Problem-focused coping, including planning and active coping, has been defined as behavioral and cognitive efforts to alter or eliminate a stressor. In contrast, emotion-focused coping, which is generally considered to be less effective than problem-focused coping, is aimed at changing emotional responses to the stressor. Examples of emotion-focused coping include venting, positive reappraisal, rumination, and self-blame. Though emotion-focused coping is often described as less effective than problem-focused coping, under certain circumstances, emotion-focused coping may be more productive than active coping responses (e.g., when a stressor cannot be changed). One example of an adaptive emotion-focused self-regulatory strategy is positive reappraisal, which is associated with lower levels of negative affect [Garnefski and Kraaji, 2006].

Despite possible advantages of emotion-focused coping in response to some types of stressors, findings in the literature have generally shown that emotion-focused coping is predictive of higher levels of psychopathology and functional impairment [Kohn et al., 1994; Ravindran et al., 1996]. In particular, emotion-focused coping strategies such as self-blame, venting, and rumination are associated with higher levels of anxiety, depression, and distress in both nonclinical [Whatley et al., 1998] and clinical samples [Ravindran et al., 1996; Roy-Byrne et al., 1992]. In addition, it has been demonstrated that the use of emotion-focused coping styles in response to stress may be a risk factor for the development of severe affective disturbances [Matheson and Anisman, 2003].

Several studies have found that women tend to use coping strategies that are aimed at changing their emotional responses to a stressful situation, whereas men use more problem-focused or instrumental methods of handling stressful experiences [Endler and Parker, 1990; Matud, 2004; Ptacek et al., 1994]. It has been hypothesized that sex differences in the way women and men typically cope with stress could be one reason why women tend to report more psychological distress and symptoms of depression and anxiety than men [Matud, 2004; Mazure and Maciejewski, 2003], which could in turn be reflected in higher prevalence rates of depression and anxiety in women [Kuehner, 2003]. Indeed, women tend to use emotion-focused coping strategies to manage stressors that are more associated with depression and anxiety than men [Mezulis et al., 2002].

The literature has shown that women who use more emotion-focused coping styles in response to stressors report more depressive and anxiety-related symptoms compared with women who use these methods less often [Bennett et al., 2005; Cohen, 2002]. Furthermore,

research on the use of particular negative cognitive styles (i.e., patterns of thought processes often used as methods of coping in response to stress and emotional situations, such as cognitive avoidance and ruminative tendencies) provides additional information on the nature of sex differences in stress responsivity and the occurrence of depressive and anxiety symptoms. For instance, women who respond to stress with negative cognitive styles have higher levels of depressive and anxiety symptoms compared with men who use the same cognitive styles [Blalock and Joiner, 2000; Mazure and Maciejewski, 2003]. Blalock and Joiner [2000] found that in a nonclinical sample, cognitive avoidance (e.g., trying to not think about stressors or wishing stressors would not occur) was significantly related to increases in anxiety and depressive symptoms over time in women, but not in men. In addition, Mazure and Maciejewski [2003] found that depressed women were more likely to report having cognitive styles characterized by concern about disapproval compared with depressed men and both nondepressed men and women. Thus, an interaction between biological sex and methods of handling life stress may be related to levels of negative affectivity.

However, though these studies indicate that women with particular negative cognitive response styles to stress have more anxiety and depressive symptoms compared with other women and men, few studies have addressed similar moderated relationships between biological sex and emotion-focused coping methods such as venting, self-blame, use of emotional support, and positive reframing. Due to the strong association between these coping styles and negative affect, women who use these emotion-focused methods of coping (or have difficulty with adaptive emotion-focused strategies like positive reframing) might be at particular risk for higher levels of depressive and anxiety symptoms compared with men who endorse similar levels of emotion-focused coping and women who use these coping strategies less frequently. These sex differences in handling stressful situations could constitute a vulnerability that puts women at risk for developing clinical levels of depression and anxiety.

Because the presence of depressive and anxiety disorders is known to affect coping behavior, it is important to study sex differences in the use of emotion regulation strategies and risk for these disorders in individuals without current psychopathology. The purpose of this study was to evaluate this putative vulnerability by examining sex differences in the use of coping styles and their relation to the presence of anxiety and depressive symptoms in a healthy, non-clinical sample. Because women are at greater risk for depression and anxiety problems compared with men, it was expected that women would report more anxiety and depressive symptoms compared with their male counterparts. In addition, it was hypothesized that biological sex would moderate the relationship between the use of emotion-focused coping styles and anxiety and depressive symptoms.

METHODS

PARTICIPANTS

Study candidates (adults aged 18–65 years) were recruited from the community and invited to participate in one of the four thematically and methodologically similar studies on stress reactivity. After giving voluntary written informed consent, potential participants were

screened to determine pharmacotherapy usage and administered the Structured Clinical Interview for DSM-IV Axis I Disorders [First et al., 2002]. Potential participants were excluded if they reported any of the following: (a) current Axis I psychiatric disorder and (b) participation in current psychopharmacological treatment. Experienced clinicians determined whether potential participants met exclusion criteria (i.e., clinical diagnoses) after completion of the Structured Clinical Interview for DSM-IV Axis I Disorders. One hundred and seven participants (65 women, 42 men; M_{age} = 26.46 years, SD_{age} = 7.54) were included in this study. This study was approved by the Butler Hospital Institutional Review Board.

MEASURES

A series of psychometrically sound measures was administered to participants, including (a) the Brief COPE [Carver, 1997], (b) the Inventory of Depressive Symptomatology, Self-report version [IDS-SR; Rush et al., 1986, 1996], and (c) the Trait Anxiety subscale of the Spielberger State-Trait Anxiety Inventory (STAI) Form-Y [Spielberger et al., 1983].

Brief COPE—The Brief COPE [Carver, 1997] is a 28-item self-report instrument that assesses 14 different methods of coping with stress, including active coping, planning, positive reframing, acceptance, humor, religion, using emotional support, using instrumental support, self-distraction, denial, venting, substance use, behavioral disengagement, and self-blame. The Brief COPE has demonstrated adequate psychometric properties [Carver, 1997]. The emotion-focused subscales of the Brief COPE that were analyzed in this study include *Positive Reframing*, *Self-blame*, *Use of Emotional Support*, and *Venting*. Internal consistency was acceptable for the subscales positive reframing (α =.64), self-blame (α =. 69), and use of emotional support (α =.71). Venting (α =.50) had only marginal internal consistency. To gain more information on the internal consistency of the subscales used in this study, Cronbach's α were computed based on responses provided by participants. Alphas fell in the moderate to good range: positive reframing (α =.67), self-blame (α =.65), use of emotional support (α =.82). Though Carver [1997] had shown that venting had only marginal internal consistency, in this sample, the α was higher (α =.69).

The Inventory of Depressive Symptomatology-Self-Report—IDS-SR[Rush et al., 1996] is a self-report measure of depressive signs and symptoms. The items provide information about vegetative symptoms, cognitive changes, mood disturbance, and anxiety symptoms. The IDS-SR has good internal reliability, strong internal consistency (α =.94), and adequate construct validity [Rush et al., 1996].

Spielberger State-Trait Anxiety Inventory Form-Y—The Spielberger STAI-T [Spielberger et al., 1983] is a well-known instrument for measuring "state" (i.e., a transient emotional state) and "trait" (i.e., a general predisposition to respond with anxiety to environmental threats) anxiety. The scale has two sets of 20 items that measure feelings of discomfort, apprehension, tension, and worry. Although the state anxiety questions relate to how the individual feels "right now," the trait anxiety questions tend to focus on how the individual "generally" feels. The STAI is used routinely to assess state and trait levels of anxiety in clinical and nonclinical populations. The questionnaires have been repeatedly

shown to possess good internal consistency (α =.86–95) and good test-retest reliability (*r* =.71–75) [Spielberger et al., 1983]. The STAI trait scale was used to measure levels of anxiety in this study.

DATA REDUCTION AND STATISTICAL ANALYSES

Sex differences in the use of the emotion-focused coping styles, positive reframing, self-blame, use of emotional support, and venting, were analyzed with a series of univariate analyses of variance. Next, analyses were conducted to isolate sex differences in subclinical depressive symptoms and trait anxiety as a function of these coping strategies. These analyses used product term regression analysis [Jaccard et al., 1990]. A dummy variable was used to represent biological sex (scored 0 =males, 1 =females). To avoid problems associated with multicollinearity, the continuous variables (i.e., coping subscales) were mean centered. The interaction terms were also calculated from the mean-centered coping variables. The dummy variable and the specified mean-centered coping subscale (e.g., positive reframing, self-blame) were entered as predictors in conjunction with the product term that was calculated between biological sex and the mean-centered coping subscale.

RESULTS

SAMPLE CHARACTERISTICS

Means and standard deviations for measures of sample characteristics are presented in Table 1. Age was not a significant predictor of scores on measures of depressive and anxiety symptoms, and therefore, was not used as a covariate in subsequent regression analyses. No significant differences were found between men (*M* =27.17, *SD* =7.11) and women (*M* =26.00, *SD* =7.82) with respect to age.

Women reported significantly more anxiety and depressive symptoms than men ($F[1, 105]=6.54$, $P=.012$ and $F[1, 106]=10.59$, $P=.002$, respectively). Scores of depressive and anxiety symptoms were within normal limits for a nonclinical population (Table 1).

SEX DIFFERENCES IN THE USE OF COPING STYLES

A series of univariate analyses of variance was conducted to determine if there were sex differences in the use of emotion-focused coping styles. Women reported that emotional support was used significantly more frequently than men ($F[1, 105]=13.82$, $P<.001$). No sex differences were evident for the use of positive reframing, self-blame, or venting.

BIOLOGICAL SEX AND COPING STYLES AS PREDICTORS OF DEPRESSIVE SYMPTOMS

Positive reframing—The overall squared multiple correlation for the equation that included both main effect terms (i.e., positive reframing and biological sex) and the interaction term was 0.142 ($F[3, 102]=5.64$, $P=.001$). Table 2 presents the relevant regression equation. Biological sex was significantly associated with depressive symptoms. The regression coefficient for the product term was also significant, suggesting the presence of a two-way interaction between positive reframing and biological sex. As seen in Figure 1, higher depression scores are associated with the use of less positive reframing in women compared with men.

Self-blame—The analysis of biological sex, self-blame, and their interaction term revealed a squared multiple correlation of 0.185 (F[3, 102] =7.72, P<.001). In the regression analyses, biological sex was a significant predictor of depressive symptoms; however, self-blame and the product term were not significant (Table 2).

Use of emotional support—The regression of biological sex, use of emotional support, and the product term provided a squared multiple correlation of 0.101 (F [3, 102] =3.82, P =.012). The main effect of biological sex was significant; however, neither the main effect of the use of emotional support nor the product term were significant predictors of depression.

Venting—The analysis of venting showed an overall squared multiple correlation for the product term analysis of venting and biological sex was 0.112 (F[3, 102] =4.28, P =.007). The main effect of biological sex was statistically significant (Table 2). No other effects were significant.

BIOLOGICAL SEX AND COPING STYLES AS PREDICTORS OF TRAIT ANXIETY

Positive reframing—The overall squared multiple correlation for the regression equation, which included biological sex, positive reframing, and their product term as predictors of trait anxiety was 0.098 (F[3, 103] =3.74, P =.013). The regression equation is presented in Table 3. The main effect of biological sex was significant; however, the other two predictor variables did not reach statistical significance.

Self-blame—The squared multiple correlation for the regression containing biological sex, use of emotional support, and their product term was 0.27 (F [3, 103] =12.73, P<.001). The main effect of biological sex and the interaction term of self-blame and biological sex were significant predictors of trait anxiety (Table 3). As seen in Figure 2, women with higher levels of self-blame had increased levels of trait anxiety compared with women with lower levels of self-blame, whereas this effect was not seen in men. The main effect of self-blame was not significant.

Use of emotional support—The overall squared multiple correlation for the product term analysis of the use of emotional support and biological sex was 0.61 (F[3, 103] =2.22, P =.090). The main effect of biological sex was statistically significant (Table 3). No other effects were significant.

Venting—The regression of biological sex, venting, and the product term on trait anxiety provided a squared multiple correlation of 0.089 (F[3, 106] =3.37, P =.021). Biological sex was a significant predictor of trait anxiety; however, the effect of venting and the product term were not significant predictors of trait anxiety (Table 3).

DISCUSSION

As expected, the findings of this study demonstrate that women report significantly more subclinical depressive and anxiety symptoms than men. In addition, the results showed that the interaction between biological sex and particular types of emotion-focused coping styles,

including positive reframing and self-blame, are related to the experience of subclinical levels of depression and anxiety. First, women who reported lower levels of positive reframing also had higher scores on a measure of depression, although a similar effect was not observed with men. In addition, women who reported higher levels of self-blame also endorsed higher levels of trait anxiety; this was not true for men.

It has been hypothesized that differences in the way women cope with stress could be related to their higher levels of psychological distress, symptoms of depression and anxiety compared with men [Matud, 2004] and may be related to sex differences in the prevalence of depression and anxiety disorders [Kuehner, 2003]. Indeed, several studies have found that women tend to use coping strategies that are aimed at changing their emotional responses to a situation, whereas men use more problem-focused or instrumental methods of handling stressful experiences [Endler and Parker, 1990; Matud, 2004; Ptacek et al., 1994].

However, the results of this study demonstrated that gender moderates the relationship between use of emotion-focused coping styles and levels of subclinical levels of depression and anxiety. A lack of positive reframing on the part of women was associated with higher levels of depression. In addition, women who used more self-blame reported more anxiety than men with similar levels of self-blame. These patterns were not found for men, as the use of positive reframing and self-blame were not significantly associated with their report of depressive and anxiety symptoms, respectively. Thus, lower levels of positive reframing and higher levels of self-blame may be a risk factor for the development and experience of negative affect in women, and may contribute to a higher prevalence of depression and anxiety in the female population. In previous studies, the use of positive reframing or reappraisal was shown to be significantly related to lower levels of depression [Garnefski et al., 2004; Martin and Dahlen, 2005]. Previous studies have also found that the use of self-blame by women is associated with more anxiety, depression, and psychological distress in response to stressful situations (e.g., following breast cancer diagnoses, before breast cancer surgery; Bennett et al. [2005] and David et al. [2006]). Furthermore, the instruction of positive reframing techniques has been found to be effective in reducing depression in clinically depressed individuals [Beck and Strong, 1982; Swoboda et al., 1990]. However, although positive reframing and self-blame have been strongly associated with negative affect, little research has demonstrated an interaction between the use of these emotion-focused coping styles and gender in levels of anxiety and depression in a nonclinical population. Future research on the comparative effectiveness of positive reframing and the use of self-blame in response to stress for men and women would provide further information for the creation of effective prevention and intervention programs that target sex differences in the clinical presentation of depression and anxiety.

Additionally, in this study, interactions between gender and other types of emotion-focused coping styles (i.e., use of emotional support, venting) were not found to be significant predictors of subclinical depressive and anxiety symptoms. The lack of these predicted effects might indicate that the use of emotional support or venting and their relationship to depression and anxiety do not differ between men and women. In addition, the use of these coping styles was not associated with depressive and anxiety symptoms in this study, and thus, it is not likely that moderated relationships would be observed. The use of emotional

support was endorsed more by women than men, although this coping style was not associated with depression or anxiety. The interaction between positive reframing and biological sex was not a significant predictor of anxiety symptoms, and similarly, the interaction between biological sex and self-blame was not significantly associated with depression. Thus, this might indicate that the significant interactions observed in this study reflect relationships that exist for each particular class of psychopathology. However, the results do not rule out the presence of these other moderated relationships. Research with larger sample sizes and clinical populations might be able to address whether such effects play a role in the development of anxiety and depressive symptoms.

The present sample was composed of healthy individuals with no psychopathology, and associations between coping, depression, and anxiety in a non-clinical sample may not generalize to individuals with anxiety and mood disorders. However, basic relationships between gender, coping, and both anxiety and depression that are seen in healthy individuals may contribute to the development of more severe anxiety and depressive pathology. Additional research with clinical and at-risk populations is needed to better understand the relationships between gender, coping, and psychopathology. The results of this study do not address whether a lack of positive reframing and higher levels of self-blame are present before the onset of anxiety and depressive symptoms, or if their use becomes more dominant in response to higher levels of these symptoms in women. The use of prospective research strategies would provide more information about causal and likely bidirectional relationships between the use of coping strategies and anxious and depressive symptomatology. Finally, the presence of other vulnerabilities that may contribute to the development and maintenance of higher levels of negative affectivity in women compared with men (i.e., stressful life events, genetic predispositions, social learning contingencies) need to be evaluated in relation to the use of emotion regulation strategies. An investigation of the relationship between these predisposing factors and the use of emotion regulation strategies would be useful to differentiate how and why women and men differ in their responses to stress. Research in these areas may influence the development and refinement of prevention and intervention strategies that focus on processes that put women at greater risk of anxiety and depressive disorders.

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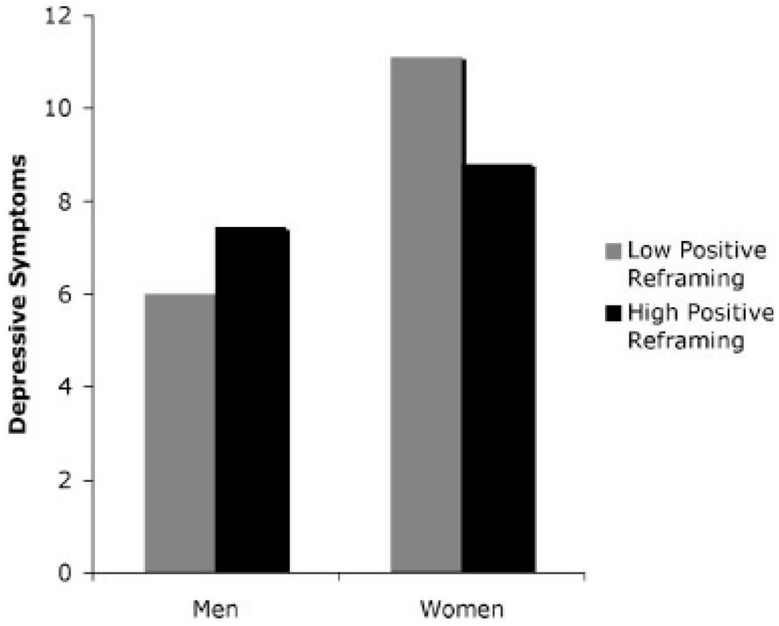

Figure 1.
Use of positive reframing in relation to biological sex and depressive symptoms.

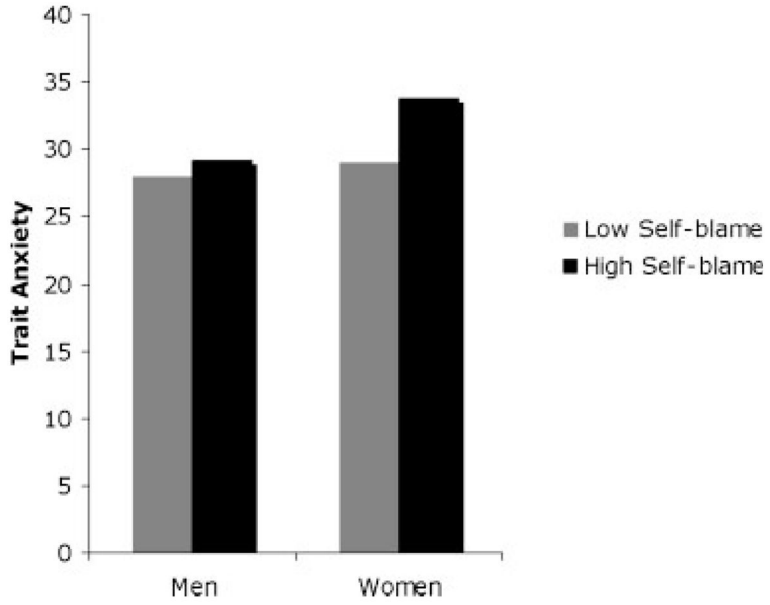

Figure 2.
Use of self-blame in relation to biological sex and trait anxiety.

TABLE 1

Mean and standard deviation for assessment measures

	Men		Women	
Variable	***M***	***SD***	***M***	***SD***
IDS-SR	6.6*	4.8	9.8*	5.1
STAI-T	28.0**	5.6	31.5**	7.7
COPE–positive reframing	4.9	1.6	5.1	1.6
COPE–self-blame	3.1	1.9	3.2	1.8
COPE–venting	3.5	1.5	4.1	2.1
COPE–use of emotional support	4.0***	1.9	5.3***	1.6

Note. N =107 (65 women).

IDS-SR, Inventory of Depressive Symptomatology, Self-report version; STAI-T, Trait Anxiety Inventory (form Y).

Analyses of variance sex effect P values:

* .002,

** .012,

*** <.001.

TABLE 2

Results for the multiple regressions of biological sex and coping styles on self-reported depressive symptoms

Predictor	*B*	*t*	*P*
Positive reframing	0.367	0.774	.441
Sex	3.118	3.192	.002
Sex × positive reframing	−1.287	−2.075	.040
Intercept	−6.685		
Self-blame	0.229	0.569	.571
Sex	3.260	3.437	.001
Sex × self-blame	0.882	1.695	.093
Intercept	6.632		
Venting	0.611	1.139	.258
Sex	2.964	2.935	.004
Sex × venting	−0.322	−0.523	.602
Intercept	6.840		
Use of emotional support	0.149	0.359	.720
Sex	3.247	3.046	.003
Sex × use of emotional support	−0.515	−0.896	.372
Intercept	6.743		

TABLE 3

Results for the multiple regressions of biological sex and coping styles on self-reported levels of trait anxiety

Predictor	*B*	*t*	*P*
Positive reframing	−0.698	−1.041	.300
Sex	3.666	2.669	.009
Sex × positive reframing	−0.316	−0.366	.715
Intercept	27.827		
Self-blame	0.321	0.613	.541
Sex	3.593	2.919	.004
Sex × self-blame	2.015	2.976	.004
Intercept	27.971		
Venting	0.753	1.008	.316
Sex	3.167	2.258	.026
Sex × venting	−0.097	−0.113	.910
Intercept	28.225		
Use of emotional support	0.110	0.189	.851
Sex	3.559	2.377	.019
Sex × use of emotional support	−0.369	−0.458	.648
Intercept	28.044		