

Self-Criticism, Neediness, and Distress Among Women Undergoing Treatment for Breast Cancer: A Preliminary Test of the Moderating Role of Adjustment to Illness

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A diagnosis of cancer can be extremely stressful, and for that reason, cancer patients' adjustment has been widely studied. Little is known, however, about how patients' personality vulnerabilities affect their adjustment to cancer. The present study examined the moderating role of several psychological strategies of adjustment to cancer in the associations between the personality predispositions of self-criticism and neediness and distress among women diagnosed with breast cancer. Portuguese women who had been diagnosed with breast cancer for the first time (n = 50) completed the Depressive Experiences Questionnaire, the Hospital Anxiety and Depression Scale, and the Mini-Mental Adjustment to

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Cancer Scale questionnaires. Both self-criticism and neediness were found to be associated with increased levels of distress, with a stronger association observed for neediness. Hierarchical regressions indicated that more adaptive adjustment to cancer (i.e., low levels of helplessness/hopelessness, low levels of anxious preoccupation, high levels of fatalism, and high levels of fighting spirit) moderates the association between neediness and distress. There was no evidence that any of the adjustment variables had any mediating effect on the relationship between the personality variables (self-criticism and neediness) and distress. Results are discussed in the context of personality vulnerability and maladaptive psychological response to the disease as a stressful life event. Implications for treatment are discussed. Though promising, the results are preliminary and more research on larger samples is warranted.

Keywords: breast cancer, neediness, self-criticism, adjustment to illness, distress

Cancer is a life-threatening disease with powerful psychological implications. Breast cancer patients are at risk for affective disorders, such as anxiety and depression (Bleiker, Pouwer, Ploeg, Leer, & Ader, 2000). The psychological vulnerability associated with cancer is significant; evidence suggests that between 15% and 40% of cancer patients experience clinically significant levels of anxiety, depression, or both (e.g., Parle, Jones, & Maguire, 1996). In addition, between 20% and 30% of cancer patients remain in a distressed state long after the initial diagnosis. In Portugal, breast cancer is the primary cause of death among women ages 35–54 (Portuguese General Directorate of Health, 2007). Over the last decade, there has been growing interest in resiliency and the capacity for coping with stress and the stress of cancer in particular (e.g., review by Johansson, Rydén, & Finizia, 2011). Basic personality predispositions seem to play a significant role in the level of adaptive coping with stress, especially in the context of an individual's response to the diagnosis of cancer.

The aim of the present study is to investigate the moderating roles of several psychological adjustment strategies in the context of cancer by examining the associations between the two basic personality predispositions defined in Blatt's personality theory (self-criticism and neediness; for a review, see Blatt, 2008) and distress among women recently diagnosed with breast cancer. The present study focuses on two central personality constructs that have not been studied previously in relation to the psychological adjustment and distress of cancer patients.

ADAPTATION TO CANCER AND DISTRESS

The conceptualization of coping presented by Lazarus and Folkman (1984) defines coping as the cognitive and behavioral effort exerted to manage specific external or internal demands. Consistent with this theory of

coping, Watson, Greer, Young, and Inayat (1988) developed a theory of adjustment to cancer that defines adjustment as the cognitive and behavioral responses of the patient to the cancer diagnosis (Watson et al., 1988). The work done by Watson et al. (1988) included the study of emotional reactions to a threatening event, whereas Lazarus and Folkman (1984) considered emotional reactions as outcomes of one's coping strategy. In this article, we adopt Watson and colleagues' (1988) concept of adjustment to cancer, by considering emotional reaction as a coping strategy.

Watson and colleagues (1988) identified different strategies used by patients to cope with cancer on the basis of the sum of the emotional, cognitive, and behavioral responses of patients to the threat of cancer. Specifically, they identified the following five different adjustment strategies: (a) fighting spirit (i.e., drive to confront and actively face the illness); (b) anxious preoccupation (i.e., experiencing the illness as a source of marked anxiety and tension); (c) fatalism (i.e., a resigned attitude toward the illness); (d) helplessness/hopelessness (i.e., adoption of a pessimistic attitude toward the illness); and (e) avoidance (i.e., avoiding direct confrontation with illness-related issues). This model has been widely studied (e.g., Breda, 2010; Ho, Fung, Chan, Watson, & Tsui, 2003; Kang et al., 2008; Watson & Homewood, 2008; Watson et al., 1994).

Adjustment responses such as fighting spirit, described as a highly optimistic constructive attitude, are accompanied by a search for more information about (breast) cancer (e.g., Classen, Koopman, Angell, & Spiegel, 1996; Watson et al., 1991). In contrast, hopelessness/helplessness, in which patients see themselves as severely ill (Grassi et al., 2005; Montgomery, Pocock, Titley, & Lloyd, 2003), is considered to be a less adaptive response. These adjustment responses are often related to the level of distress that the cancer patient is experiencing (e.g., Falagas et al., 2007). Ho et al. (2003) reported a positive correlation between helplessness/hopelessness and anxious preoccupation, on the one hand, and anxiety and depression, on the other. In contrast, they observed a negative correlation between fighting spirit and anxiety and depression (Ho et al., 2003). Similar results were reported by Watson et al. (1994) and Kang et al. (2008). Moreover, Anagnostopoulos, Kolokotroni, Spanea, and Chrysochoou (2006) found that helplessness/hopelessness and anxious preoccupation were negatively correlated with social function and mental health and that fighting spirit and fatalism were positively correlated with social function and mental health. Finally, Breda (2010) and Kang et al. (2008) found a negative correlation between positive attitude (a composite factor of the fatalism and fighting spirit scales), on the one hand, and anxiety and depression, on the other.

The research literature on women diagnosed with and treated for breast cancer supports the view that these women often experience severe psychological and physical distress that disrupts their self-esteem and interpersonal

relations (e.g., Kahane, 1993)—the fundamental personality dimensions that Blatt has proposed as dimensions of personality vulnerability (for a review, see Blatt, 2008). The present study explored the combined effect of coping strategies and personality vulnerabilities on the distress experienced by women undergoing treatment for breast cancer.

SELF-CRITICISM AND NEEDINESS AS PERSONALITY VULNERABILITIES TO DISTRESS

In the context of the study of personality variables that might contribute to vulnerability to distress, Blatt (1974, 1990, 2004, and 2008) and colleagues defined a theory of personality that involves dimensions of interpersonal relatedness (e.g., dependency/neediness) and self-definition (e.g., self-criticism). Personality development can be characterized as the integration of the individual's capacity for self-definition and interpersonal relatedness (Blatt, 2008) and is essential for optimal personality development and the reduction of vulnerability to distress, as well as physical and psychological well-being (Blatt & Zuroff, 1992). However, these normal developmental processes can be disrupted, leading to a preoccupation with interpersonal relatedness at the expense of the development of the self or to a preoccupation with issues of the self at the expense of interpersonal relatedness, that is, to an anaclitic (dependency/neediness) or introjective (self-critical) personality organization (for a review, see Blatt, 2008).

There is a considerable body of empirical and clinical research to attest to the relevance of self-criticism and dependency/neediness as personality vulnerabilities in the context of depression (for a review, see Zuroff, Mongrain, & Santor, 2004) and to indicate that high levels of these personality dimensions indicate vulnerability to distress in both clinical and community samples (e.g., Besser, Luyten, & Blatt, 2011; Besser & Priel, 2003a, 2003b, 2005a, 2005b; Besser, Vliegen, Luyten, & Blatt, 2008; Blatt, 2008; Campos, Besser, & Blatt, 2010; Corveleyn, Luyten, & Blatt, 2005; Mongrain & Zuroff, 1995). Other research has shown that high levels of these traits also indicate vulnerability to distress in response to congruent stressful life events (e.g., Besser & Priel, 2010, 2011; Vliegen et al., 2010). The existence of the dimensions of dependency/neediness and self-criticism have been empirically validated using the Depressive Experiences Questionnaire (DEQ), which includes items that represent common experiences rather than overt symptoms of individuals suffering from depression (Blatt, D'Afflitti, & Quinlan, 1976). Moreover, Zuroff et al. (2004) concluded that Blatt's concepts are continuous, nearly orthogonal dimensions that are independent of neuroticism, depression, and social context.

Neediness includes preoccupation with abandonment and separation, as well as feelings of being unloved. Individuals who emphasize interpersonal relationships place particular value on close and intimate relations and are particularly concerned about being able to give as well as receive affection and love. These individuals fear loss and abandonment and tend to seek help and support from others, especially when they are confronted with stressful situations. These interpersonally oriented individuals are particularly concerned with issues of trust and dependency (for a review, see Blatt, 2008).

Self-criticism includes high levels of concern regarding issues of self-definition rather than interpersonal relationships. These individuals tend to be independent and concerned with issues of prestige, control, and power. They tend to be aggressive and assertive in the service of self-definition. They desire to be recognized, respected, and admired and tend to be critical of themselves and of others (Blatt, 2008).

Different types of defense mechanisms and coping styles are associated with these two basic personality configurations (e.g., Besser, 2004; Besser & Priel, 2003b; Blatt, 1990; Campos, Besser, & Blatt, 2011; Mongrain, Vettese, Shuster, & Kendal, 1998; Mongrain & Zuroff, 1995). Individuals preoccupied with issues of relatedness tend to use avoidant defense mechanisms (e.g., denial and repression; Blatt, 1990) and maladaptive coping strategies (Besser & Priel, 2003b). Individuals preoccupied with issues of self-definition tend to use counteractive defenses (e.g., projection, reaction formation, and overcompensation; Blatt, 1990).

OVERVIEW AND PREDICTIONS

Previous studies have revealed that cancer patients' adjustment is correlated with the degree of their psychological distress and have suggested that one of the most adaptive responses is fighting spirit, in contrast to the more maladaptive responses of feelings of helplessness/hopelessness and anxious preoccupation. Several studies have examined the relationship between the five types of adjustment responses to cancer (Watson et al., 1991, 1994) and distress (e.g., Kang et al., 2008; Watson et al., 1994). To the best of our knowledge, our study is the first to examine the associations between the personality predispositions of self-criticism and neediness and distress among women diagnosed with breast cancer and the role of several adjustment strategies in moderating the associations between these personality vulnerabilities to stress and distress.

Self-criticism and neediness are associated with vulnerability to distress in response to congruent stressful events (e.g., Besser & Priel, 2010, 2011; Blatt, 2004; Campos, Besser, & Blatt, 2012), as well as the use of maladapt-

tive coping strategies (e.g., Besser & Priel, 2003b; Blatt, 2004) and maladaptive defense mechanisms (e.g., Besser, 2004; Campos et al., 2011). Finally, maladaptive adjustment strategies in the context of cancer are associated with distress (e.g., Cooper & Faragher, 1993; Edgar, Ladislav, & Schaffner, 1997).

Two assumptions underlie the hypotheses of the current study: (a) coping with stress is strongly associated with the ability to decrease its detrimental consequences (Lazarus & Folkman, 1984), and (b) coping styles closely interact with personality characteristics by potentially moderating the associations of these personality characteristics with distress. Previous research consistently suggests cross-situational temporal consistency and the relative stability of coping efforts and their association with personality characteristics (e.g., Bolger & Schilling, 1991). Moreover, despite a divergence of opinions in the literature on coping and the role that personality characteristics play in the development of relatively stable coping mechanisms (see Suls, David, & Harvey, 1996), there is an overall consensus that personality characteristics are a key factor in the way people process and cope with stress (e.g., Bolger & Zuckerman, 1995; Costa & McCrae, 1990).

On the basis of the literature on both adjustment to cancer and distress, we view the various adjustment strategies as moderating variables in the relationship between personality dimensions and reactions to the diagnosis of cancer (see Figure 1). Baron and Kenny (1986) described a moderating effect “as an interaction between a focal independent variable and a factor that specifies the appropriate conditions for its operation” (p. 1174).

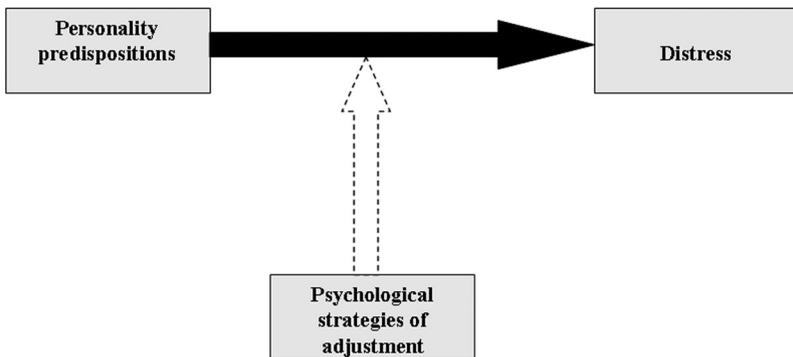


Figure 1. Conceptual model underlying the current study. This model assumes that personality vulnerability factors affect distress and that these effects are affected by psychological strategies of adjustment (i.e., psychological strategies of adjustment shape the personality vulnerability–distress associations). In other words, the contextual factor (psychological strategies of adjustment to cancer) was assumed to qualify the effect of personality vulnerability factors (predictors) on distress (outcome).

Moderation occurs when a variable changes either the direction or the strength of a relationship between a predictor variable and an outcome variable. Moderated relationships are those in which a variable (e.g., adjustment responses) associates with an outcome (e.g., distress symptoms) via an interaction with an independent variable (e.g., personality vulnerabilities) when the main effects of both variables (e.g., adjustment and personality vulnerabilities) are controlled. In this study, we examine whether adjustment responses alter the relationship between personality variables and distress (see Frazier, Tix, & Barron, 2004, for a review).

We hypothesized (a) that neediness and self-criticism are associated with high levels of distress, (b) that low levels of adaptive strategies and high levels of maladaptive adjustment strategies are also associated with high levels of distress, and (c) that high levels of adaptive adjustment strategies and low levels of maladaptive adjustment strategies moderate the relationship between the personality vulnerability factors of self-criticism and neediness and distress among women recently diagnosed with breast cancer.

In summary, the present study examined the moderating role of several psychological adjustment strategies in the associations between the personality predispositions of self-criticism and neediness and distress among women who had recently been diagnosed with breast cancer for the first time. Thus, this article addresses an important gap in current knowledge about the association between patients' personality vulnerabilities and their associations with emotional response to cancer, as well as the potential mechanisms by which various psychological adjustment strategies moderate these associations. Findings from this study could have important consequences for stress and personality research, as well as clinical interventions that focus on adaptation to stressful life events. Although the present study is based on a limited number of participants ($N = 50$), because of the difficulties involved in obtaining a sample of women recently diagnosed with breast cancer for the first time, the sample size is reasonable for the examination of relationships estimated by correlations and regression (Van Voorhis & Morgan, 2007, p. 48). Finally, this study is noteworthy for its novelty and foundational contribution to future research.

METHOD

Participants and Procedure

Initially, Raquel Ferreira made personal contact with a convenience sample of 80 women who had been diagnosed with breast cancer and invited each of them to participate in this study. The women were approached

individually when they came to the Oncology Department of Espírito Santo Hospital (Évora, Portugal) to receive treatment. Of the 80 women approached, 50 agreed to participate in the study and signed forms of informed consent (30 women declined to participate because of time constraints, fatigue, or not feeling well after receiving treatment or were excluded because they had been diagnosed with breast cancer previously). Participants' ranged in age from 31 to 68 years ($M = 52.0$, $SD = 10.9$) and had 6 to 19 years of formal education ($M = 9.6$, $SD = 4.5$). Participants had received the diagnosis of breast cancer within the last 12 months ($M = 6.0$, $SD = 2.9$) and were being treated with chemotherapy, with a mean number of treatment sessions of 8.3 ($SD = 7.4$) and a mean time already in treatment of 6.5 weeks ($SD = 7.0$). The mean illness stage in our sample was 2.3 ($SD = 2.9$). Thirty-seven of the women (74%) were married, and 13 (26%) were single, divorced, or widowed.

All of the participants volunteered; none were paid or compensated for their participation. Data were collected in individual sessions, and instructions were presented in written form. The between-participants order of the presentation of the questionnaires was randomized. The data collection procedures were authorized by the hospital's Director of Oncology, and the recommendations of the hospital's Ethics Committee were followed.

Measures

Medical and Sociodemographic Questionnaire

Information regarding age, educational level (years of formal education), marital status (single, married, divorced, or widowed), time since diagnosis (months), mental illness (specific diagnosis), time already in treatment (weeks), number of sessions, and illness stage (from early stage = 1 to late stage = 4) was obtained from the patient's medical file.

The Depressive Experiences Questionnaire (DEQ)

This questionnaire includes 66 items and yields two factors that are associated with the anaclitic and introjective personality dimensions, dependency and self-criticism (Blatt et al., 1976). The first factor, self-criticism, reflects concerns about failure, guilt, and the ability to meet high standards set by the self and by others (e.g., "It is not who you are but what you have accomplished that counts"). The second factor, dependency, reflects a preoccupation with abandonment and separation, feelings of being unloved, and

fear of loss (e.g., “Without support from those who are close to me, I would be helpless”). The validity of these two factors has been demonstrated in studies conducted across a range of different cultures (see a summary by Blatt, 2008).

Using a second-order factor analysis, Rude and Burnham (1995) identified neediness as a maladaptive subfactor within the DEQ Dependency factor. neediness involves excessive preoccupation and fear concerning interpersonal relationships, devastating feelings of helplessness, fear and apprehension concerning separation and rejection, and intense concerns about the loss of gratification and support, but without any link to any particular individual or a specific relationship. The standardized weighted scores from the second-order factor analysis of the DEQ conducted by Rude and Burnham were used as the measure of neediness, and the standardized scores from the first-order factor analysis conducted by Blatt et al. (1976) were used as the measure of self-criticism. The Portuguese version of the DEQ has adequate psychometric properties (Campos, 2000, 2009). Its internal consistency and factor structure are very similar to those obtained by Blatt et al. (1976). In the present study, the Cronbach’s alpha values were .82 for neediness and .76 for self-criticism.

The Mini-Mental Adjustment to Cancer Scale (Mini-MAC)

This is a 29-item questionnaire that assesses five cancer-specific coping/adjustment strategies: helplessness/hopelessness (e.g., “I feel that life is hopeless”), anxious preoccupation (e.g., “I suffer great anxiety about it”), fighting spirit (e.g., “I feel very optimistic”), cognitive avoidance (e.g., “I deliberately push all thoughts of cancer out of my mind”), and fatalism (e.g., “I’ve had a good life; what’s left is a bonus”). Each item is rated on a 4-point scale ranging from *definitely does not apply to me* to *definitely applies to me*, with a higher subscale score indicating stronger use of the coping strategy (Watson et al., 1994). The Mini-MAC has been used in several countries, including United Kingdom, Italy, Greece, Korea, China, and Norway. The validated Portuguese version of the Mini-MAC (Pais-Ribeiro, Ramos, & Samico, 2003) was used in this study. The Cronbach’s alpha values for the Mini-MAC ranged between .72 and .84, but the level of reliability was lower for the fatalism scale (<.60), as has been observed in other samples (e.g., Breda, 2010; Grassi et al., 2005; Kang et al., 2008). The Portuguese version of the Mini-MAC has good validity in the present study, the Cronbach’s alpha levels were .83 for helplessness/hopelessness, .61 for fighting spirit, .84 for anxious preoccupation, .56 for fatalism, and .78 for avoidance.

Hospital Anxiety and Depression Scale (HADS)

This is a 14-item screen for anxiety (e.g., “I get a sort of frightened feeling as if something awful is about to happen”) and depression (e.g., “I have lost interest in my appearance”). Each item is rated on a 4-point scale, with scores ranging from 0 to 21 for each subscale. Cut-off points are used to classify patients’ anxiety and depression as within the normal range, borderline, or clinical (Zigmond & Snaith, 1983). The HADS has demonstrated validity for detecting cases of anxiety and depression in cancer patients (Bjelland, Dahl, Haug, & Neckelmann, 2002). In the Portuguese study conducted by Pais-Ribeiro et al. (2007), the Cronbach’s alpha values were .76 for the anxiety scale and .81 for the depression scale. In the present study, the alpha levels were .84 for the anxiety scale and .89 for the depression scale.

RESULTS

Data Analysis

We used the Kolmogorov–Smirnov test (K-S test), the Lilliefors test, and the Shapiro–Wilk test to examine the normality of the distributions of the variables. The results of these tests indicated that these distributions were relatively normal (p values $> .53$). We also examined whether multicollinearity among personality, distress, and adjustment to cancer variables was a concern. The eigenvalues of the scaled and uncentered cross-products’ matrix, condition indices, and variance decomposition proportions, along with the variance inflation factors (VIF) and tolerances from the multicollinearity analyses indicated the absence of any multicollinearity. Our analyses focused on the role of adjustment to cancer in moderating the association between the personality characteristics of self-criticism and neediness and distress.

First, we performed a bivariate analysis correlating age, education, marital status, stage of illness, time since diagnosis, number of treatment sessions, time already in treatment, and having a mental disorder with the distress scores. We also performed a bivariate analysis correlating the personality characteristics of self-criticism and neediness with the distress and adjustment to cancer scales. We then tested our hypotheses regarding the moderating role of adjustment to cancer strategy, utilizing multivariate analyses and hierarchical multiple regression with interactions represented by the product terms (see Aiken & West, 1991), to examine the unique associations between the personality predispositions, the adjustment to cancer strategies,

distress, and the interactive associations of the personality vulnerabilities with the adjustment to cancer and distress scores. We first entered the personality vulnerability factors of self-criticism and neediness into the model, followed by the adjustment to cancer scores and, finally, the Personality Variables \times Adjustment to Cancer interaction. Variables were centered prior to the computation of the product terms. In light of the relatively small sample size, power analyses (Cohen, Cohen, West, & Aiken, 2003) and estimations of effect sizes (Cohen, 1988) were also carried out.

Preliminary Analyses

In the present sample, time since diagnosis ranged between 2 and 12 months ($M = 5.98$, $SD = 2.92$), number of treatment sessions ranged from 0 to 32 ($M = 8.29$, $SD = 7.38$), and mean duration (in weeks) of the treatment period already completed ($M = 6.52$, $SD = 6.99$). Among the participants in this study, 24% ($n = 12$) had Stage 1 disease, 32% ($n = 16$) had Stage 2 disease, 34% ($n = 17$) had Stage 3 disease, and 10% ($n = 5$) had Stage 4 disease. In a preliminary analysis, we explored possible associations among age, education, marital status, stage of illness, time since diagnosis, number of treatment sessions, time already in treatment, and having a mental disorder with the distress scores. The only significant correlations observed were between the distress scores and age ($r = .32$, $p < .05$), distress and education ($r = -.34$, $p < .05$), and distress and stage of illness ($r = .42$, $p < .01$).

Bivariate Associations

The zero-order correlations are summarized in Table 1. Self-criticism and neediness were significantly correlated with distress. The adjustment to cancer scales were significantly correlated with distress, except for the avoidance scale. Self-criticism was significantly associated with both helplessness/hopelessness and avoidance, whereas neediness was significantly correlated with both anxious preoccupation and fighting spirit.

Multivariable Analyses

Self-Criticism, Neediness, and Distress: The Moderating Role of Adjustment to Cancer

The hierarchical multiple regression analyses are summarized in Table 2. In Step 1, we found that self-criticism and neediness associated with distress

Table 1. Correlations Among the Study Variables

Variable	1	2	3	4	5	6	7	8	9
Personality vulnerability									
1. Self-criticism	—								
2. Neediness	.06	—							
Adjustment to cancer									
3. Helplessness/hopelessness	.52 ^{***}	.26	—						
4. Anxious preoccupation	.25	.54 ^{***}	.24	—					
5. Fighting spirit	-.03	-.39 ^{***}	-.43 ^{**}	-.46 ^{***}	—				
6. Avoidance	.45 ^{**}	-.09	.10	.25	.22	—			
7. Fatalism	-.13	-.10	-.04	-.16	.44 ^{**}	.25	—		
Distress									
8. Anxiety	.44 ^{***}	.61 ^{***}	.44 ^{***}	.69 ^{***}	-.56 ^{***}	.04	-.31 [*]	—	
9. Depression	.32 [*]	.57 ^{***}	.41 ^{***}	.72 ^{***}	-.55 ^{***}	-.02	-.31 [*]	.83 ^{***}	—
10. Distress ^a	.39 ^{**}	.62 ^{***}	.44 ^{***}	.74 ^{***}	-.58 ^{***}	.00	-.33 [*]	.95 ^{***}	.96 ^{***}

Note. N = 50.

^a A composite of anxiety and depression.

* p < .05, two-tailed. ** p < .01, two-tailed. *** p < .001, two-tailed.

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

Table 2. Multivariate Hierarchical Multiple Regression of Distress Symptoms

Predictor	R^2	ΔR^2	B	SE B	β	95% CI of B		<i>t</i> / <i>F</i>	Effect size of β	Overall <i>F</i>	<i>df</i>
						LL	UL				
Step 1	.51							23.46***		23.46***	2, 48
Self-criticism			3.23	1.00	.34	1.21	5.26	3.22***	0.93		
Neediness			6.77	1.16	.61	4.43	9.11	5.82***	1.68		
Step 2	.53	+2%						1.69		16.45***	3, 47
Helplessness/hopelessness			.21	.16	.16	-.11	.53	1.30	0.38		
Step 3	.73	+20%						14.72***		21.76***	5, 45
Self-Criticism \times Helplessness/Hopelessness			-.33	.10	-.51	-.54	-.12	-3.22**	0.96		
Neediness \times Helplessness/Hopelessness			.46	.21	.22	.04	.88	2.20*	0.66		
Alt. Step 2	.67	+16%						22.30***		31.03***	3, 47
Anxious preoccupation			.99	.21	.49	.57	1.41	4.72***	1.38		
Alt. Step 3	.75	+8%						6.90**		26.15***	5, 45
Self-Criticism \times Anxious Preoccupation			.22	.16	.13	-.10	.54	1.38	0.41		
Neediness \times Anxious Preoccupation			.63	.22	.24	.19	1.07	2.88**	0.86		
Alt. Step 2	.64	+13%						15.43***		24.99***	3, 47
Fighting spirit			-2.05	.52	-.39	-3.10	-.10	-3.93***	1.15		
Alt. Step 3	.71	+8%						5.60**		20.38***	5, 45
Self-Criticism \times Fighting Spirit			.70	.54	.13	-3.81	1.78	1.31	0.39		
Neediness \times Fighting Spirit			-1.82	.57	-.29	-2.97	-6.67	-3.21**	0.96		
Alt. Step 2	.52	+1%						1.07		16.61***	3, 47
Avoidance			-.38	.37	-.12	-1.13	.36	-1.03	0.30		
Alt. Step 3	.54	+2%						1.09		10.45***	5, 45
Self-Criticism \times Avoidance			-.24	.39	-.08	-1.02	.54	-.63	0.19		
Neediness \times Avoidance			-.52	.47	-.13	-1.46	.42	-1.12	0.33		
Alt. Step 2	.56	+5%						5.37*		19.55***	3, 47
Fatalism			-.91	.39	-.23	-1.67	-.12	2.32*	0.68		
Alt. Step 3	.61	+5%						2.72*		13.68***	5, 45
Self-Criticism \times Fatalism			-.55	.46	-.13	-1.46	.37	-1.20	0.36		
Neediness \times Fatalism			-1.08	.50	-.23	-2.09	-.08	-2.17*	0.65		

Note. ΔR^2 = increase in R^2 ; *t* = *t* value associated with β ; *F* = *F* value associated with the changes in R^2 . *N* = 50. Alt. = alternatively; CI = confidence interval; LL = lower limit, UL = upper limit.
 * *p* < .05, two-tailed. ** *p* < .01, two-tailed. *** *p* < .001, two-tailed.

($d = 0.93$ and 1.68 , respectively). In addition, anxious preoccupation ($d = 1.38$), fighting spirit ($d = 1.15$), and fatalism ($d = 0.68$) were each significantly associated with distress scores above and beyond the associations between the personality variables and the distress scores. Finally, when we tested for the hypothesized Self-Criticism \times Adjustment to Cancer interaction and Neediness \times Adjustment to Cancer interaction, the results indicated that the two-way interactions of Self-Criticism \times Helplessness/Hopelessness and Neediness \times Helplessness/Hopelessness were significantly associated with distress ($d = 0.96$ and 0.66 , respectively). In addition, the two-way interactions of Neediness with Anxious Preoccupation ($d = 0.86$), Fighting Spirit ($d = 0.96$), and Fatalism ($d = 0.65$) were significantly associated with distress. No significant results were found for the avoidance scale or for its interactions with the personality variables (see Table 2). The significant interactions observed for neediness are presented in Figure 2. As shown in Figure 2, levels of neediness were significantly associated with distress scores as a function of adjustment to cancer, with significantly stronger associations in the presence of high adjustment to cancer scores. Thus, high adjustment to cancer scores (that is, low levels of helplessness/hopelessness [Figure 2a], low levels of anxious preoccupation [Figure 2b], high levels of fighting spirit [Figure 2c], and high levels of fatalism [Figure 2d]) moderated

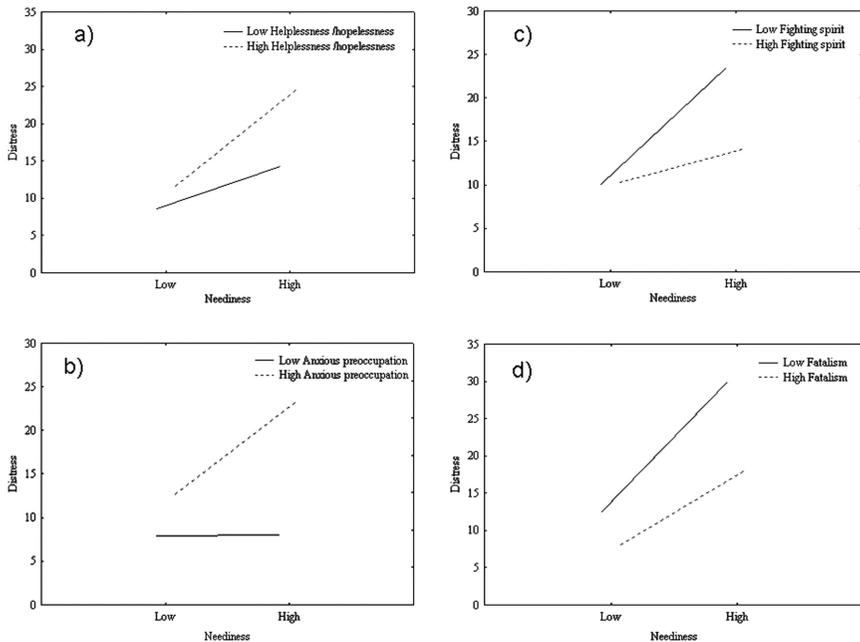


Figure 2. Illustrations of the interactions between neediness and adjustment.

the associations between neediness and distress. The only significant two-way interaction obtained for self-criticism in its association with distress involved the helplessness/hopelessness scale (see Figure 3). As shown in Figure 3, high levels of self-criticism were found to be a vulnerability factor regardless of the level of helplessness/hopelessness. High levels of helplessness/hopelessness were associated with distress among participants with low levels of self-criticism.

These models significantly explained 54% to 75% of the variance in distress (see Table 2). For the observed R^2 (of .73, .75, .71, .54, and .61) given the probability level of .05, the five predictors and the sample size of 50,¹ the observed power (Cohen et al., 2003) was found to be between 0.99 and 1.00.

Finally, it is important to note that when we examined our models while controlling for the shared variance associated with age, education, and stage of illness, the results did not change. In the interest of parsimony and to simplify the presentation of the models, these variables were trimmed from the final models.

Alternative/Competing Models

We also investigated possible competing mediational models (that is, that the relationships between the personality variables [self-criticism and neediness] and distress are mediated by adjustment to cancer variables). Mediation occurs when an external variable such as adjustment to cancer accounts for the relationship between a predictor, such as personality predispositions, and an outcome, such as symptoms of distress (Frazier et al., 2004). However, close examination of the series of regression analyses presented in Table 2 revealed that the associations of self-criticism and neediness with distress (Step 1) remained significant and that the magnitude of their strength did not significantly decrease when the adjustment to cancer variables were added to the models (Step 2). Thus, adjustment to cancer is not responsible for the existence of the associations between the personality variables and distress, but does determine the strength of these associations (see, e.g., Baron & Kenny, 1986, for the criteria for mediation).

¹ It is important to note that a general heuristic rule is that one should have no fewer than 50 participants for a correlation or regression, with the minimum number of participants increasing with the number of independent variables. For regression equations that involve five or more predictors (independent variables), as in the regressions presented in Table 2, an absolute minimum of 10 participants per predictor variable is appropriate.



Figure 3. Illustration of the interaction between self-criticism and adjustment.

DISCUSSION

The present study examined the moderating roles of the five psychological strategies of adjustment to cancer (fighting spirit, anxious preoccupation, fatalism, helplessness/hopelessness, and cognitive avoidance) in the associations between the personality predispositions of self-criticism and neediness and distress among women diagnosed with breast cancer.

To the best of our knowledge, this is the first study to examine the roles of both the personality dimensions of self-criticism and neediness and of the various psychological strategies of adjustment to cancer, and their relationships with distress among women with breast cancer. As observed previously in other contexts (see Blatt, 2004, for a review), in the present study, we found that these personality dimensions were risk factors for distress in the context of women being treated for breast cancer. The associations were stronger for neediness than for self-criticism, suggesting that the diagnosis of breast cancer constitutes a major threat to interpersonal relationships, more so than a threat to self-esteem or self-worth (e.g., Blatt & Zuroff, 1992).

These findings are of particular importance in light of the fact that other studies have demonstrated that the quality of social support is significantly related to adjustment to cancer and to physical and psychological well-being (e.g., Berterö, 2000; Bloom, Stewart, Johnston, Bank, & Fobair, 2001; Filazoglu & Griva, 2008). There have also been suggestions that dependency/

neediness and helplessness are risk factors affecting the onset and clinical course of some forms of cancer (e.g., Blatt, Cornell, & Eshkol, 1993; Bleiker et al., 2000; McKenna, Zevon, Corn, & Rounds, 1999) and, as indicated by the results of the present study, to distress in reaction to the illness. There is also evidence to support the notion that perceived family support is associated with psychological distress in both patients and their spouses (Baider, Ever-Hadani, Goldzweig, Wygoda, & Peretz, 2003). Moreover, an earlier study found that female partners have a more accurate understanding of their husbands' experiences with prostate cancer than male partners do with their wives' breast cancer experiences (Carlson, Ottenbreit, St. Pierre, & Bultz, 2001). Thus, for women with breast cancer who exhibit high levels of neediness, the effect of the threat to interpersonal relationships (presented by the disease) and its potential associations with decreased support might contribute to high levels of psychological distress.

As in other studies, high levels of helplessness/hopelessness and anxious preoccupation and low levels of fighting spirit were found to be associated with distress (e.g., Anagnostopoulos et al., 2006; Breda, 2010; Ho et al., 2003; Kang et al., 2008; Watson et al., 1994). Low levels of fatalism were also associated with distress in the current study. Thus, contrary to the findings of Watson et al. (1994), in the current study, fatalism appears to be an adaptive adjustment strategy. In fact, as with fighting spirit, it was associated with a positive attitude facilitating coping with breast cancer (Breda, 2010; Kang et al., 2008). Fatalism may be a mixed scale that contains items related to a fatalistic view of the illness, but also an accepting view of the future and growth (Ho et al., 2003; for example, "I've had a good life; what's left is a bonus"; "Since my cancer diagnosis, I now realize how precious life is and I am making the best of it"), which may reflect coping and adjustment to the illness. From our clinical practice, our general impression is that Portuguese women who trust the medical personnel with whom they are interacting and have faith in the future—a sense that they will be protected and can relax because of their strong religious beliefs—and focus on these beliefs rather than on the physical consequences of the illness are less distressed and cope more effectively with the emotional and physical consequences of the disease.

Recent findings of studies of Portuguese women with breast cancer (Patrão, 2007; Patrão & Leal, 2004) provide some empirical support for this impression. In a longitudinal study conducted in Portugal, Patrão (2007) found a positive psychosocial course over the psycho-oncological cycle and documented the existence of an adaptive profile in relation to breast cancer. According to Patrão (2007), a breast cancer diagnosis can stimulate the development of a resilient attitude, characterized by emotional stability at the end of the disease process. In fact, acceptance of one's condition, including the reality of its implications, learning to live with it and, at times, accepting

its irreversible course, has been found to be an adaptive coping strategy for people with cancer (Berckman & Austin, 1993; Carver et al., 1993).

In our study, high levels of fighting spirit, low levels of anxious preoccupation, and low levels of helplessness/hopelessness interacted with neediness and moderated its associations with distress. This implies that distress may be especially significant in dependent women diagnosed with breast cancer when there is a lack of positive attitude, despair, and a preoccupation with the illness.

Surprisingly, high levels of helplessness/hopelessness interacted with self-criticism in association with distress. Self-criticism was found to be a vulnerability factor regardless of the level of helplessness/hopelessness, but high levels of helplessness/hopelessness were also associated with distress for participants with low levels of self-criticism. Thus, although the relationship between high levels of neediness and distress was stronger than the relationship between self-criticism and distress, the association of neediness with distress was moderated by the use of more adaptive coping mechanisms, whereas self-criticism was found to be a vulnerability factor independent of the adjustment mechanisms used.

Feelings of helplessness or hopelessness do not interact with self-criticism, but do seem to be a risk factor for highly needy individuals. As illustrated in Figure 3, low levels of self-criticism interact with high levels of helplessness/hopelessness to create distress, but there is no similar relationship when levels of helplessness/hopelessness are low.

Clinical Implications

Numerous psychological interventions have been developed for cancer patients (for a review, see Capozzo, Martinis, Pellis, & Giraldi, 2010): psycho-educational, cognitive-behavioral, supportive-expressive, cognitive-existential, and group psychotherapy of both short and long duration. These interventions have been effective in reducing psychological distress and pain and in facilitating coping (e.g., Akechi et al., 2007). Patrão (2007) demonstrated the beneficial effect of psychological counseling among women with breast cancer in Portugal. Consistent with these findings, the results of the present study have important clinical implications in highlighting the central role of personality factors in distress among women with breast cancer, especially those who exhibit high levels of the maladaptive dependent personality organization (neediness). Moreover, these results point to mechanisms by which this vulnerability could be moderated by the use of various adjustment strategies, thus suggesting the importance of helping women with breast cancer to more effectively cope and limit their negative

feelings to manageable levels. These findings also suggest the need for the investigation of more complex questions, including the identification of which treatments best facilitate adaptation among patients with different types of personality organizations and which types of therapists or therapy work best and lead to different kinds of therapeutic change (see Blatt, 2008).

Finally, feelings of helplessness and hopelessness may have different consequences in terms of distress, depending on the patient's basic personality style. Self-critical individuals are highly vulnerable to distress regardless of their level of helplessness/hopelessness. Addressing these core personality characteristics (self-criticism and neediness) may be an important therapeutic strategy. Finally, informing oncologists about these issues may improve their ability to identify the sources of a patient's distress and understand the role of the patient's personality organization in facilitating resilience, especially the role of effective coping strategies in needy patients.

Limitations of This Study

It is important to note that, in this study, the relationships among personality, distress, and adjustment to cancer were assessed with self-report measures in a cross-sectional design within a relatively small sample. The correlational nature of this study precludes the determination of causality. That is, the present study cannot provide a definitive answer concerning the direction of the observed effects and thus, it cannot preclude the possibility that the crisis situation (cancer diagnosis) may increase neediness and self-criticism. Further research is needed to develop a clearer understanding of the causal processes that link personality vulnerability factors, adjustment, and distress. The fact that we investigated only one potential moderator (i.e., five psychological strategies of adjustment to cancer) presents an additional limitation. Future research projects should investigate multiple moderating and mediating mechanisms simultaneously.

The size of the sample in the present study is not large because of the difficulty of obtaining an appropriate sample, but we do maintain that it is reasonable. However, the results should be confirmed in studies with larger samples to increase generalizability, as well as statistical power. Nevertheless, it is important to note that even though our results are based on a relatively small sample size, power analyses (Cohen et al., 2003) indicated that our analyses were of adequate power, and the high estimates of effect sizes (Cohen, 1988) indicated that the strengths or magnitudes of the reported significant relationships are large. Despite its limitations, the findings of this study have important therapeutic implications for psychologists who work with distressed patients undergoing treatment for breast cancer and under-

score the need to consider personality factors and adjustment strategies in the treatment process.

It should also be noted that, as in other samples (e.g., Breda, 2010; Grassi et al., 2005; Kang et al., 2008), the reliability coefficient of the Fatalism subscale of the Mini-MAC questionnaire in the present study was relatively low. The heterogeneous nature of the Fatalism subscale may explain its lower reliability, as well as its negative association with measures of psychological symptoms in the present study and in other studies (e.g., Breda, 2010; Grassi et al., 2005; Kang et al., 2008).

Future studies should also expand beyond self-report measures of coping, perhaps by incorporating interviews with significant others, such as family members and professionals (e.g., social workers) about the ways in which individual patients are coping. Longitudinal studies might also be helpful. Finally, further studies are encouraged to investigate the applicability of the present study's proposed model to other populations of patients who have been diagnosed with life-threatening diseases.

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