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Report

Adjustment to breast cancer: age-related differences in coping and emotional distress

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Summary

Women who are diagnosed with breast cancer are at high risk for experiencing affective distress; however, previous research suggests that older women may be less likely than younger women to experience extreme distress. Two issues remain unclear regarding age and affective distress: (a) the psychological processes that account for the association of age and distress, and (b) whether this association remains stable over the course of treatment and recovery from breast cancer. This study investigated symptoms of anxiety and depression in 80 women ages 36–80 years old with newly diagnosed breast cancer near the time of their diagnosis and at 3 and 6 months post-diagnosis. Disease severity and coping style were also examined. Symptoms of anxiety/depression and age were negatively correlated near the time of diagnosis. Path analysis controlling for disease severity revealed that coping involving the ventilation of emotion fully mediated the effect of age on symptoms of anxiety and depression. However, the association of age with symptoms of anxiety/depression was no longer significant at 3 and 6 months post-diagnosis, although emotional ventilation still predicted greater emotional distress at 6 months. These findings suggest that age is a salient factor to consider in the psychological adjustment of women with breast cancer near the time of initial diagnosis, with younger women exhibiting greater affective distress and a tendency to engage in less adaptive ways of coping. However, younger and older women do not differ in their adjustment over the subsequent course of their treatment and initial recovery. The use of emotional ventilation coping remains associated with poorer adjustment, independent of patients' age.

Introduction

Women who are diagnosed with breast cancer are at high risk for experiencing significant affective distress, with a subgroup manifesting symptoms of anxiety and depression that meet criteria for psychiatric disorder up to several years post-diagnosis ([1–3], for review). Despite the higher incidence of breast cancer in women over age 65 and evidence that older women are more likely to initially present with more advanced disease [4], older women may be less likely to suffer extreme or prolonged emotional distress in response to being diagnosed with breast cancer. That is, a negative correlation between age and indices of emotional distress among women with breast cancer has been reported in several studies. This relationship has been found for women ranging from 30 to over 80 years old who were assessed prior to and following a breast biopsy [5] and several days after initial surgery [6]; the size of the correlation between age and emotional distress has been moderate across these studies. One study examining this association 10 months after diagnosis found a non-significant correlation between age and affective distress [7].

Two issues regarding the association of age and adjustment to breast cancer remain unresolved. First, it is not clear if age remains a salient predictor of psychological adjustment over the course of treatment for and recovery from breast cancer. No studies have used a true prospective design to determine if

there are changes in the association of age and distress from the time of diagnosis, during adjuvant treatment, and during recovery. It is plausible that younger women are initially more distressed but are able to employ more adaptive coping strategies and enlist social support over the course of treatment and recovery.

Second, reasons for the apparent resilience of older women in the face of a breast cancer diagnosis are not well understood. Age may best be viewed as a marker of risk for emotional distress, but other factors operate as the mechanisms that underlie the effects of age [8]. The ways in which women cope with breast cancer and its treatment are also a likely candidate to account for age differences in emotional adjustment (see [3], for review). While a range of coping strategies have been considered in studies of women with cancer, cognitive and behavioral avoidance are most consistently associated with poorer psychosocial adjustment (e.g. [9–11]). Additionally, the ventilation of emotion (i.e., letting out of or losing control of emotions) has also been implicated as a factor in adjustment to a range of traumas, although results have been inconsistent. Expressing emotion within the context of a supportive group therapy intervention has been shown to improve self-reported mood and symptoms of anxiety and depression in women with metastatic breast cancer [12]. In studies involving a range of trauma experiences, writing or talking about the trauma has been associated with reduced anxiety and improved health over the long term but increased anxiety in the short term [13, 14].

Prior research has not adequately investigated the role of individual coping strategies in relation to age and adjustment to breast cancer. Studies investigating the relationship between age and coping styles in dealing with a variety of stressors have generally found that people of different ages employ similar coping mechanisms. However, in cross-sectional analyses of community based samples [15–17] and chronically ill adults [18], older people have been found to engage in fewer coping responses that involve avoidance strategies (e.g., less reliance on wishful thinking) and less of those responses that involve ventilation of emotion, particularly negative or hostile affect. Restricted use of ventilation of emotions as a means of coping, which has also been found to vary with age and has been associated with poorer adjustment to trauma, may also account for age related differences in emotional distress, although research to date has not investigated this relationship.

In addition to the need to explore these possible mechanisms underlying age differences in psychological distress among breast cancer patients, conclusions from prior studies are difficult to draw due to methodological problems. While a minority of studies addressing adaptation to breast cancer have utilized women of a broad range of ages [5–7, 9, 19], more often prior studies have not included women over a certain age cutoff, usually set at age 65 or 70 [20–26], or have not utilized them in critical analyses [1]. Furthermore, disease severity, a factor that is confounded with age, has not been controlled in previous studies.

The focus of the current research is to address two questions regarding the relationship between age and emotional distress in newly diagnosed breast cancer patients. First, the present study examined whether the association of age and emotional distress changes over the course of the diagnosis, treatment, and recovery from breast cancer. In order to account for the potentially confounding effects of the extent of physical illness in the present study, regression analyses of age and distress controlled for disease severity. In addition, a psychometrically strong measure of psychological symptoms that excludes somatic symptoms was used. Second, the present study uses linear multiple regression analysis to investigate how coping responses may mediate the expected inverse relationship between age and affective distress. Advancing age is expected to predict less use of the avoidant coping responses of problem avoidance and wishful thinking, and lower levels of coping involving ventilation of emotion. Use of these maladaptive coping styles is expected to mediate the relationship between age and emotional distress, after accounting for significant demographic variables.

Method

Subjects

Participants in this research were 80 women with newly diagnosed breast cancer who were patients at the Breast Care Center (BCC) affiliated with Fletcher Allen Health Care and the Vermont Cancer Center. The women ranged in age from 36 to 80 years old, with a mean age of 54.8. Educational history was varied, with a mean education level of 2 years of college, although several woman had not completed high school and several held advanced degrees. Reflecting the composition of the local community, 90% of the

women were Caucasian, with 10% self-identified as African-American, Asian-American, or other. Marital status was varied, with 65% either married or cohabitating in a committed relationship, 20% single or divorced, and 15% widowed. Disease severity was determined by the cancer stage [27] at diagnosis, a measure of tumor size and metastasis. This index ranges from Stage I, a small, localized tumor, to Stage IV, metastatic disease. Based on data taken from patients' medical records, 55 participants were diagnosed with Stage I breast cancer, 25 with Stage II, 6 with Stage III, and 1 with stage IV.

Measures

Emotional distress

Women completed the Symptom Checklist-90 Revised (SCL-90R) [28] to assess psychological symptoms over the 7 days prior to their treatment planning appointment. The SCL-90R is a 90-item measure in which each response to a specific symptom is rated on a 5-point scale of distress, ranging from zero, 'not at all', to four, 'extremely'. Internal consistency, test-retest reliability, and validity are well established for this measure [28]. The internal consistency for this sample was $\alpha = 0.94$. The SCL-90R is scored and interpreted in terms of nine primary symptom subscales, and three global indices of distress. Normative data, including clinical cut-offs, are available for all scales [28]. As prior research has indicated that symptoms of anxiety and depression are most salient for women in the early stages of breast cancer (e.g. [19, 29]; see [3], for review), a combined *T*-score of two subscales, anxiety and depression, was used to gauge participants' level of emotional distress. These subscales also are preferable as they do not include somatic items, which might be confounded with physical side-effects of breast cancer and its treatment. Sample items from these subscales include being distressed by 'nervousness or shakiness inside', 'feeling fearful', and 'feeling hopeless about the future'.

Coping

Coping responses were assessed through the Coping Strategies Inventory (CSI) [30], a 72-item measure in which respondents indicate on a 5-point scale from 'not at all' to 'very much' the extent to which they have used specific coping strategies in managing their experiences with breast cancer since their diagnosis [30]. Items on the CSI reflect emotion- and problem-focused efforts to engage or disengage with a specified stressor, in this case breast cancer. Engagement coping scales on the CSI include problem solving, cognitive restructuring, social support, and emotional expression (or ventilation). Disengagement coping scales on the CSI include wishful thinking, problem avoidance, self-criticism, and social withdrawal. The measure is scored and interpreted in items of the eight primary coping scales derived through hierarchical factor analysis. The CSI has strong internal consistency and test-retest reliability [30]. Internal consistency for subscales for the present sample ranged from $\alpha = 0.63$ for wishful thinking to $\alpha = 0.96$ for self-criticism, with a mean of 0.81 and seven of the eight scales 0.75 or greater.

Medical information

Stage of disease, menopausal status, and performance status were determined through a review of participants' medical charts and structured interviews. Women were determined to be either menopausal, post-menopausal, experiencing irregular menstruation indicating entry into the climacteric period leading to menopause, or post hysterectomy, with or without removal of the ovaries.[1] ECOG performance status ratings, a measure of the degree of fatigue and disruption in physical functioning experienced since the time of diagnosis, were derived from data collected from participants during the structured interview. Women were asked to what extent they stayed in bed during waking hours as a result of fatigue and physical symptoms, with answers ranging from zero, indicating experiencing no physical symptoms, to four, indicat-

[1] Based on its role in the onset and treatment of breast cancer, menopausal status has been proposed as a biological process that may influence emotional adjustment to this disease (e.g. [5, 19]). That is, levels of emotional distress associated with breast cancer may change from pre- to post-menopause. Data on the incidence of breast cancer implicate menopausal status as a risk factor, as the incidence of breast cancer increases logarithmically before menopause and linearly thereafter [31]. However, to date neither the relationship between menopausal status and emotional distress nor their possible shared association with age have been examined. Two ANOVAs were conducted to assess the association of menopausal status with affective distress. The first ANOVA used a menopausal status grouping of four levels (pre-menopausal, post-menopausal, currently menopausal, and hysterectomy) and the second ANOVA used menopausal status grouping of two levels (pre-menopausal and post-menopausal). No significant differences in affective distress were found in either analysis ($F(3, 75) = 1.32$, ns and $F(1, 56) = 2.29$, ns, respectively). That is, the levels of anxiety/depression were similar among women of different menopausal status, thus suggesting that the relationship between age and emotional distress is not likely due to or affected by menopausal status.

Table 1. Means and standard deviations of variables

	Diagnosis		3 Months		6 Months	
	Mean	SD	Mean	SD	Mean	SD
Age	54.81	10.20	–	–	–	–
Education	14.37	3.28	–	–	–	–
Anxiety/depression *T*-score	58.46	8.70	54.48	9.21	53.05	9.86
Coping						
Problem avoidance	1.70	0.45	1.92	0.44	1.81	0.50
Wishful thinking	2.49	0.74	2.38	0.74	2.27	0.79
Self-criticism	1.26	0.52	1.15	0.33	1.20	0.54
Emotional ventilation	2.38	0.81	2.26	0.67	2.01	0.83
Social withdrawal	1.77	0.51	1.73	0.57	1.79	0.71
Cognitive restructuring	3.30	0.81	3.11	0.67	2.78	0.76
Social support	3.56	0.98	3.15	0.91	2.72	0.98
Problem solving	3.23	0.64	2.90	0.61	2.61	0.87

Education was measured in number of years. The anxiety/depression *T*-scores were based on a normative sample with a mean of 50 and standard deviation of 10. The (CSI) coping subscales ranged in value from 1 ('Not at all') to 5 ('Very Much'). $n = 80$.

ing resting or remaining in bed as a result of physical symptoms 100% of their normal waking hours.

Procedure

Women were recruited into the study at the time of their surgical treatment planning appointments, which occurred, on average, 12 days after a positive cancer diagnosis was made. At that time, participants took part in a 30 min structured interview and completed several paper and pencil self-report measures, including those used in the present study. Psychological measures were completed again at approximately 3 and 6 months after diagnosis. These time points were chosen because they correspond with the timing of standardized medical follow up medical office visits for all women with breast cancer receiving their care at the participating breast care center. In pilot work patients reported that these exams were meaningful time markers of their recovery. Approximately 85% of eligible patients agreed to participate in the study.

Results

Means and standard deviations of demographic, disease, and psychological variables measured near time of diagnosis and at 3 and 6 month follow-ups are displayed in Table 1. Women reported experiencing some physical symptoms (e.g. nausea, increased fatigue, or pain) near diagnosis, but on average, they were fully ambulatory and not bedridden as a result of these symptoms. The mean scores for the coping scales at each time point indicate that on average women used these coping strategies somewhere between 'very little' and 'somewhat'. The mean of the anxiety and depression *T*-scores for this sample indicates that the women in this study had moderately elevated symptoms of anxiety-depression near diagnosis (i.e. approximately one standard deviation above the normative mean).

Correlation analyses

Correlational analyses indicate that, as hypothesized, age was inversely correlated with symptoms of anxiety/depression near the time of diagnosis, $r = -0.27$, $p = 0.015$, and at 3-month follow-up, $r = -0.22$, $p = 0.049$; however, patient age was not significantly correlated with anxiety/depression symptoms at 6-month follow-up, $r = -0.14$, ns. These correlations suggest that the association of age and affective distress may change over the course of treatment and recovery. Cancer stage was not correlated with anxiety/depression symptoms near diagnosis ($r = -0.05$), at 3-months ($r = -0.13$), or at 6-months ($r = 0.05$).

Pearson correlations of the eight coping scales on the CSI with cancer stage, patient age, and symptoms of anxiety/depression near diagnosis and at the 3-month and 6-month follow-ups are presented in Table 2. These correlations indicate that age was inversely related to emotional ventilation coping at all three

Table 2. Correlations of coping with disease stage, age, and anxiety/depression

	Stage			Age			Anxiety/Depression		
	Diag	3 Mos	6 Mos	Diag	3 Mos	6 Mos	Diag	3 Mos	6 Mos
Emotional ventilation	−0.02	−0.02	0.04	−0.26*	−0.39***	−0.28*	0.43***	0.36***	0.23*
Wishful thinking	0.22	0.26*	0.19	0.13	0.07	0.04	0.25*	0.40***	0.45***
Problem avoidance	0.28*	0.14	−0.06	0.18	0.27*	0.18	0.06	−0.08	0.12
Cognitive restructuring	−0.08	−0.03	0.12	0.02	−0.14	−0.03	−0.09	0.12	0.02
Social support	−0.21	0.02	0.05	−0.30**	−0.23*	−0.19	0.16	0.18	−0.03
Problem solving	−0.10	−0.07	0.01	0.04	−0.10	−0.11	0.17	0.06	0.18
Self-criticism	0.21	0.03	0.05	−0.09	−0.07	0.02	0.37***	0.34***	0.53***
Social withdrawal	0.21	0.16	0.06	0.07	0.16	0.09	0.26**	0.23*	0.56***

Diag = Diagnosis; 3 Mos = 3-month follow-up; 6 mos = 6-month follow-up. $n = 80$.
* $p < 0.05$.
** $p < 0.01$.
*** $p < 0.001$.

time points, and inversely correlated with social support near diagnosis and at 3-months. Cancer stage was generally unrelated to the types of coping strategies reported by patients. Symptoms of anxiety/depression were significantly correlated with emotional ventilation coping at all three time points, as well as with wishful thinking, self criticism, and social withdrawal. Thus, only emotional ventilation coping was correlated with both age and affective distress.

Multiple regression analyses

A series of hierarchical regression equations were constructed to test the association of age and symptoms of anxiety/depression of each of the three assessments, and to test emotional ventilation coping as a mediator of the relation between age and distress when it was significant; that is, age was examined as a predictor of emotional distress with emotional ventilation coping as the mediating variable. At each time point, age and cancer stage were entered as predictors of symptoms of anxiety/depression. At 3- and 6-month follow-ups, symptoms of anxiety/depression at the prior assessment were also entered to examine changes in these symptoms over the course of time. The use of emotional ventilation coping was entered as an additional predictor at the second step in the regression equations at each time point.

Emotional ventilation coping functioned as a mediator to the extent that it accounted for the relation between age and symptoms of affective distress near the time of diagnosis and at the 3-month follow-up. That is, emotional ventilation coping was selected for these analyses because it is the only coping scale that met the criteria specified by Baron and Kenny [32] for mediation: (a) variations in age must be significantly related to the mediator (emotional ventilation) and to the outcome (distress); (b) variations in the mediator (emotional ventilation) must be significantly related to the outcome (distress); and (c) when age and the mediator (emotional ventilation) are considered together, a previously significant relation between age and the outcome (affective distress) is no longer significant or is reduced in magnitude, while the relation between the mediator (emotional ventilation coping) and the outcome (affective distress) remains significant. Since the relations required in (a) and (b) are apparent from the correlational analyses described above, the series of regression analyses was conducted to test the third criterion specified by Baron and Kenny [32]. Stage of disease was controlled for in these analyses.[2]

The regression analyses predicting symptoms of affective distress are presented in Table 3. The first regression analysis suggests that greater affective distress is associated with younger age near the time of diagnosis. The overall model was significant, $F(2, 77) = 3.37, p = 0.039$, accounting for 8% of the variance ($R^2 = 0.10$). Age was a signific-

[2] A second set of regression equations were constructed in which emotional ventilation coping at one time point was used to predict affective distress at a second time point, controlling for initial levels of affective distress. In the equation predicting time 2 affective distress from time 1 data, there was a significant effect for time 1 affective distress but not for time 1 emotional ventilation coping. In the equation predicting time 3 affective distress from time 2 data, there was a significant effect for time 2 affective distress but not for time 2 emotional ventilation coping. Therefore, emotional ventilation coping was not related to subsequent changes in affective distress.

Table 3. Linear regression predicting anxiety/depression symptoms

	β	sr^2	p
Equation 1. Diagnosis			
Step 1			
$F(2, 77) = 3.37$, $p = 0.039$, $R^2 = 0.08$			
Age	−0.28	0.08	0.012
Stage	−0.03	0.00	ns
Step 2			
$F(3, 76) = 7.98$, $p < 0.0001$, $R^2 = 0.24$			
Age	−0.17	0.03	ns
Stage	−0.02	0.00	ns
Emotional ventilation coping	0.41	0.16	0.0002
Equation 2. 3-month follow-up			
Step 1			
$F(2, 77) = 2.79$, $p = 0.067$, $R^2 = 0.07$			
Age	−0.17	0.03	ns
Stage	−0.19	0.04	ns
Step 2			
$F(3, 76) = 10.36$, $p < 0.0001$, $R^2 = 0.29$			
Prior anxiety/depression	0.49	0.22	0.0001
Age	−0.03	0.00	ns
Stage	0.20	0.04	0.037
Step 3			
$F(4, 75) = 8.28$, $p < 0.0001$, $R^2 = 0.31$			
Prior anxiety/depression	0.43	0.13	0.0003
Age	0.01	0.00	ns
Stage	0.21	0.04	0.033
Emotional ventilation coping	0.16	0.02	ns
Equation 3. 6-month follow-up			
Step 1			
$F(2, 77) = 0.63$, ns; $R^2 = 0.02$			
Age	−0.12	0.01	ns
Stage	0.05	0.00	ns
Step 2			
$F(3, 76) = 13.55$, $p < 0.0001$, $R^2 = 0.35$			
Prior anxiety/depression	0.60	0.33	0.0001
Age	−0.02	0.00	ns
Stage	−0.07	0.00	ns
$F(4, 75) = 13.40$, $p < 0.0001$, $R^2 = 0.42$			
Prior anxiety/depression	0.58	0.31	0.0001
Age	0.06	0.00	ns
Stage	−0.07	0.00	ns
Emotional ventilation coping	0.27	0.07	0.004

$n = 80$.

ant predictor of distress ($\beta = -0.28$, $p = 0.012$). In the second step, emotional ventilation was added revealing an overall significant model, $F(3, 76) = 7.98$, $p < 0.0001$, accounting for 24% of the variance in emotional distress ($R^2 = 0.24$). This equation revealed that the use of more emotional ventilation coping was a significant predictor of greater affective distress ($\beta = 0.41$, $p < 0.0002$). Age was no longer a significant predictor of greater distress ($\beta = -0.17$, $p = -0.09$) once emotional ventilation coping was included in the equation. Thus, the association between age and affective distress was

fully accounted for by the use of emotional ventilation coping.

The equation predicting symptoms of anxiety/depression at 3 months post-diagnosis was significant at the first step, $F(3, 76) = 10.36$, accounting for 29% of the variance. Symptoms of anxiety/depression near diagnosis ($\beta = 0.49$, $p < 0.0001$) and cancer stage ($\beta = 0.21$, $p = 0.037$) were significant predictors, but age was no longer significantly related to emotional distress. When emotional ventilation coping was added to the model the overall equation was significant, $F(4, 75) = 8.28$, $p < 0.0001$, accounting for 30% of the variance. Prior symptoms of anxiety/depression and cancer stage remained significant predictors but neither age nor emotional ventilation coping were significant predictors.

The equation predicting symptoms of anxiety/depression at 6-months post-diagnosis was significant at the first step, $F(3, 76) = 13.55$, $p < 0.001$. Symptoms of anxiety/depression at 3 months was the only significant predictor ($\beta = 0.60$, $p < 0.001$); age was not a significant predictor. When emotional ventilation coping was added, the equation remained significant, $F(4, 75) = 13.40$, $p < 0.0001$, accounting for 42% of the variance. Anxiety/depression symptoms at 3 months ($\beta = 0.58$) and emotional ventilation coping ($\beta = 0.27$, $p = 0.004$) were significant; age was not a significant predictor.

Discussion

The current study provides important new information on the association between age and psychological adjustment to breast cancer. Although the expected association of younger age with poorer psychological adjustment was replicated near the time of patients' diagnosis, this association was no longer significant at follow-up assessments 3 and 6 months later. Furthermore, the association between age and symptoms of anxiety/depression near the time of diagnosis was fully accounted for (mediated by) the greater tendency of younger women to use emotional ventilation as a form of coping.

These results partially replicate and clarify prior findings of an inverse relationship between age and affective distress in women with newly diagnosed breast cancer (e.g. [5, 6]; see [3], for review). Notably, this relationship was significant after controlling for disease severity, a potentially confounding variable that has not been consistently considered in prior studies. However, age was no longer related to symptoms of anxiety and depression during the course of treatment and recovery. Younger and older women did not differ in their levels of affective distress once they had responded to the stress of their initial diagnosis. This pattern is similar to that reported by Vinokur et al. [7] who found that the association between patient age and emotional distress at 10-months post-diagnosis was non-significant. These findings suggest that younger women find the diagnosis of breast cancer more traumatic than older women, but they are able to adapt as well as their older counterparts once the initial stress has subsided.

The current study provides support for the hypothesis that chronological age near a patient's diagnosis may best be interpreted as a marker for other psychological processes. One type of coping, the ventilation of emotions, emerged as a significant mediating variable in a path model predicting affective distress from age, after controlling for cancer stage. Women of an older chronological age utilized emotional ventilation coping less frequently, and this fully accounted for the variance in affective distress that was attributable to age.

These findings regarding the utility of emotional ventilation coping within 10 days of receiving a breast cancer diagnosis have several important implications. First, they suggest that for women of all ages, reliance on emotional ventilation coping is associated with experiencing more symptoms of anxiety and depression. Furthermore, the association of emotional ventilation coping with greater affective distress was also significant at the 6-month follow-up, independent of patient age. These findings at first may seem counter intuitive, as clinical wisdom generally dictates that ventilation of emotion leads to better adjustment. However, the present findings are consonant with findings that following disclosure of traumatic memories and feelings, subjective ratings of distress increase for up to several months after the disclosure (e.g. [13, 14]). Furthermore, items on the emotional expression (ventilation) scale of the CSI emphasize a cathartic approach to letting go of emotions (e.g. 'I found ways to blow off steam', 'I let my emotions out', and 'My feelings were overwhelming and they just exploded'). This is in contrast to an approach that emphasizes the regulation of and gaining a greater understanding of emotions, such as that encouraged in therapeutic interventions [12]. Thus, the current study suggests that the potential benefit of expressing emotion as a way to cognitively organize, assimilate, and make sense of the trauma

may not be realized by the pure ventilation of emotions. The cognitive and emotional demands placed on women immediately after the diagnosis of breast cancer may, in fact, be incompatible with attempts to gain perspective and insight into the trauma; those women who do engage in ventilation may be doing so at the expense of engaging in more productive coping responses. However, it is also possible that the opposite path is operating; that is, more emotional distress may lead to the use of more emotional ventilation coping. These analyses do not allow for a clear resolution of the direction of this pathway.

Second, the mediational role of emotional ventilation coping in the association of age and distress has not been found previously. Greater use of emotional ventilation by younger women accounts for a significant portion of the variance in affective distress. Variations in the extent of the use of ventilation of emotions as a function of age may reflect cohort differences in the degree to which the ventilation of emotion is an acceptable method of coping [18]; that is, older women in this sample may have held more prohibitions against open expression of feelings. Alternatively, choices in coping style may be understood as a function of the developmental processes of aging and the effects of cumulative experience. Coping responses might be expected to evolve into more effective and situation-appropriate styles, particularly for health related stressors, which are encountered more frequently as people age [14].

Contrary to prior findings [10, 15], in the current study age-related differences were not found in the use of avoidant coping strategies. As predicted, however, the use of wishful thinking, self-criticism, and social withdrawal coping was associated with affective distress for women of all ages. Failure to find an association between age and avoidance coping strategies may be due to methodological differences between the present study and prior research. For example, the present study focused on the first 6 months following diagnosis and utilized the CSI rather than the Ways of Coping Checklist (WOC) [10] to identify and measure coping mechanisms. It is possible that larger variation in coping styles among older and younger women may become evident over the course of their experience with cancer and its treatment. Furthermore, while the CSI was chosen for its strong psychometric properties, comparisons with findings based on the WOC are difficult as specific coping factors are differently defined in the two measures. The finding that avoidance coping is associated with affective distress is supported by prior research (e.g. [9]; see [3] for review) using a variety of coping scales. The current study highlights the fact that the negative consequences of using avoidance coping in the first period after a breast cancer diagnosis are salient for women of all ages.

Results from the current study have potential clinical implications. In terms of psychological adjustment to breast cancer, age can best be viewed as a source of resilience in response to the initial diagnosis. Thus, medical professionals encountering older women with new breast cancer should keep in mind that physical frailty and emotional frailty do not always co-occur. In fact, the present study replicates findings that younger women, despite reporting more social support, show more affective distress in the face of a breast cancer diagnosis. Thus, the provision of additional psychological services for younger women at the time of diagnosis may be warranted. However, the increased distress of younger women does not persist beyond the initial diagnosis, and they should not be viewed as more vulnerable to emotional distress during treatment and recovery.

Unlike age, however, coping is volitional and subject to personal control. Thus, results from the current study indicate that coping may be an appropriate target for interventions designed to assist women of all ages in adjusting to a diagnosis of cancer. In particular, interventions designed to decrease the use of avoidance coping strategies and pure ventilation of emotions may enhance psychological adjustment. While an excessive amount of ventilation of negative affect is correlated with greater affective distress, expression of affect in response to a breast cancer diagnosis that leads to greater regulation and understanding of emotions is likely to be adaptive. The mediational role of emotional ventilation in the relationship between age and distress suggests that overuse of ventilation is more prominent in younger women near the time of diagnosis. Professionals working with groups of cancer patients of mixed ages should consider these different coping styles in selecting participants and developing protocols for intervention. Heterogeneous age groups may be preferable as older women bring specific coping skills that might be beneficial to share with younger women; however, women of different ages have different coping skills strengths and deficits and thus different treatment needs.

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