# Dispositional Emotional Expressivity, Cancer-Specific Coping, and Distress in Socioeconomically-Disadvantaged Latinas

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*Objective:* Coping processes directed toward avoiding and approaching stressor-related thoughts and emotions predict psychological adjustment. However, few studies have examined how the relationship between dispositional emotional tendencies and stressor-specific coping affects outcomes. The aim of the current study was to examine the association of dispositional emotional expressivity (i.e., the propensity to experience and express emotions strongly) with cancer-specific coping through avoidance and emotional approach to predict intrusive thoughts and depressive symptoms in Latinas with breast cancer. *Method:* Recently diagnosed Latina breast cancer patients receiving treatment completed standardized assessments via interview at 2 time points: within 18 months of diagnosis (Time 1; $N = 95$) and 3 months later (Time 2; $N = 79$). *Results:* Most women were immigrants (93%), reported a combined household income of $20,000 or less (75%), did not graduate from high school (59%), and primarily spoke Spanish (88%). In path analyses, more recent immigration was associated with greater dispositional expressivity, which in turn was associated with coping with the cancer experience using both greater avoidance and emotional approach strategies. Only avoidance-oriented strategies predicted an increase in intrusive thoughts at 3 months. No significant effects on depressive symptoms were observed. *Conclusions:* Findings suggest that Latina breast cancer patients who have a propensity to experience and express emotions strongly may be initially overwhelmed by their cancer-related emotions and consequently turn to avoidance-oriented *and* emotional approach strategies to cope with their diagnosis. Avoidance-oriented coping in turn may uniquely predict an increase in cancer-related intrusive thoughts 3 months later.

*Keywords:* avoidance, approach, breast cancer, coping, Latina

Coping processes directed toward avoiding and approaching stressor-related emotions predict psychological adjustment (Aldao, Nolen-Hoeksema, & Schweizer, 2010; Moskowitz, Hult, Bussolari, & Acree, 2009; Roesch et al., 2005; Stanton, 2011). Despite

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evidence that dispositional and stressor-specific emotion regulation are related but not redundant constructs (Bouchard, Guillemette, & Landry-Léger, 2004; Carver & Scheier, 1994; Carver, Scheier, & Weintraub, 1989), there is a notable paucity of research examining the relationship between dispositional emotional tendencies and stressor-specific coping in the cancer context. The aim of the current study was to examine the association of dispositional emotional expressivity (i.e., the propensity to experience and express emotions strongly) with both cancer-specific coping through avoidance and emotional approach (i.e., processing and expressing stressor-related emotions; Stanton, Kirk, Cameron, & Danoff-Burg, 2000) to predict distress in recently diagnosed Latina breast cancer patients.

Evidence suggests that higher dispositional emotional expressivity is associated with better overall psychological and social functioning (Burgin et al., 2012), as well as lower psychological distress in the cancer context (Quartana, Laubmeier, & Zakowski, 2006). Given that being diagnosed with cancer typically evokes strong emotions, a dispositional propensity to experience and express emotions more strongly (Gross & John, 1997) may also be

related to individuals' choice of cancer-specific coping strategies as well as the adaptive utility of these coping strategies. We specifically focus on the relationship of dispositional emotional expressivity with two higher-order coping constructs, avoidance and emotional approach, given their documented association with psychological adjustment in the cancer context (Roesch et al., 2005; Stanton, Danoff-Burg, et al., 2000). In coping through emotional approach, emotional processing is the deliberate attempt to acknowledge, understand and explore one's emotions, whereas emotional expression is the deliberate attempt to communicate (either verbally or nonverbally) stressor-related emotions. Under particular conditions, emotional approach coping is an adaptive strategy in coping with chronic stressors (Stanton, 2011) and is associated with improved psychological wellbeing (e.g., decreased distress and increased vigor, quality of life, finding benefit) in breast cancer patients (Manne et al., 2005; Stanton, Danoff-Burg, et al., 2000). On the other hand, avoidance involves attempts at denial as well as behavioral and cognitive disengagement. Typically, using avoidance to cope with chronic stressors predicts maladjustment (Moskowitz, Folkman, Collette, & Vittinghoff, 1996; Penley, Tomaka, & Wiebe, 2002) and is associated with increased psychological distress (e.g., greater negative mood and decreased vigor) in women with breast cancer (Carver et al., 1993; Stanton & Snider, 1993).

In the context of a very recent diagnosis of a life-threatening disease or relatively low environmental resources, the propensity to experience and express emotions strongly (dispositional emotional expressivity) could both promote greater use of cancer-specific emotional approach coping as well as result in paradoxical greater use of cancer-specific avoidance coping due to the profound nature of the emotional experience. Previous research suggests that congruency between high levels of both dispositional emotional expressivity and coping through processing and expression of stressor-related emotions is associated with improved outcomes in patients with chronic illnesses. High dispositional emotional expressivity matched with high (or increasing) stressor-specific emotional approach coping is associated with better physical functioning in fibromyalgia patients (van Middendorp et al., 2008) as well as improved psychological adjustment across time in women with metastatic breast cancer (Stanton & Low, 2012). Nevertheless, much remains to be understood about the relationship of dispositional emotional tendencies with choice of stressor-specific coping beyond the match between dispositional emotional expressivity and emotional approach coping. This study aims to address this gap in the literature.

The aim of the current study is to examine the association of dispositional emotional expressivity with both cancer-specific avoidance and emotional approach coping following diagnosis to predict cancer-specific intrusive thoughts and depressive symptoms across three months in Latina breast cancer patients. Repeated thoughts about a stressful experience can become bothersome over time and increase negative mood and anxiety (Clark & Rhyno, 2005). In women with breast cancer, cancer-specific intrusive thoughts are associated with higher psychological distress, fear of cancer progression, posttraumatic stress disorder, and poorer quality of life (Cordova et al., 1995; Mehnert, Berg, Henrich, & Herschbach, 2009). Similarly, depression in women with breast cancer predicts many negative outcomes, including poorer quality of life, lower medication adherence, and mortality (Hjerl et al., 2003; Sedjo & Devine, 2011; Weitzner, Meyers, Stuebing, & Saleeba, 1997).

Our sample of primarily immigrant, Spanish-speaking, socioeconomically disadvantaged, Latina breast cancer patients provides a unique opportunity to study how these processes unfold in an understudied, underserved population. Breast cancer is the leading cause of cancer death among Latina women in the U.S. (American Cancer Society, 2012), and lower socioeconomic status is associated with higher cancer death rates and significant barriers to high quality health care regardless of race and ethnicity (American Cancer Society, 2011, 2014). Maximizing quality of life in Latina breast cancer patients is of utmost importance as they experience more pronounced decrements in quality of life after cancer when compared to non-Latina White women (e.g., Carver et al., 2005; Eversley et al., 2005; Maly, Umezawa, Ratliff, & Leake, 2006; see Yanez, Thompson, & Stanton, 2011 for a review). In light of evidence that culture influences individuals' expression of emotion (Ekman, 1972; Gross & John, 1995) and that Latino cultures in particular express emotions strongly (Garza, 1978; Ramirez & Castaneda, 1974), we were interested in the association of immigration status (i.e., time since immigration and age at immigration) and dispositional emotional tendencies. We hypothesized that more recent immigration and older age at immigration would reflect stronger ties with a woman's culture of origin and be associated with higher dispositional emotional expressivity.

With respect to our primary aim of examining the interplay of dispositional emotional expressivity with both cancer-specific coping through avoidance and emotional approach on outcomes, we hypothesized that dispositional emotional expressivity would be associated with greater emotional approach coping (Stanton, Kirk, et al., 2000). However, given the context of a recent diagnosis and relatively low environmental resources in this sample of primarily Spanish-speaking, immigrant Latina breast cancer patients, we did not have a directional hypothesis regarding the relationship of dispositional emotional expressivity with cancer-specific avoidance coping. It is possible that greater dispositional emotional expressivity would predict lower cancer-specific avoidance or could paradoxically result in greater use of avoidance coping in an attempt to escape the profound nature of this emotional experience for patients. Consistent with previous research in breast cancer samples indicating that emotional approach coping is associated with improved psychological adjustment (Manne et al., 2005; Stanton, Danoff-Burg, et al., 2000) and avoidance predicts maladjustment (Carver et al., 1993; Stanton & Snider, 1993), we hypothesized that cancer-specific emotional approach coping would in turn predict lower cancer-specific intrusive thoughts and depressive symptoms at three months and cancer-specific avoidance coping would predict higher levels of both outcomes. Given evidence that suggests congruency between high dispositional emotional expressivity and emotional approach coping is associated with improved wellbeing (Stanton & Low, 2012; van Middendorp et al., 2008), we also tested an interaction between these variables to determine whether high dispositional emotional expressivity matched with high cancer-specific emotional approach coping predicted a decline in distress across three months.

# Method

## Participants

As part of a larger project examining adjustment and quality of life in Latina breast cancer patients, a sample of women receiving treatment at a large safety net hospital affiliated with UCLA, Olive View–UCLA Medical Center, were recruited to participate in two phone interviews. Eligible patients were Latina and had received a breast cancer diagnosis of any stage (including stage 0 or ductal carcinoma in situ) within the past 18 months. Of 109 eligible women who were identified by a patient navigator, 107 women agreed to participate. Of the women enrolled, 12 women did not complete the Time 1 interview ($N = 95$) and 16 did not complete the follow up Time 2 interview ($N = 79$). All patients were enrolled in an active breast cancer navigation program for the first year or longer of treatment through the Avon Cares for Life Program at Olive View–UCLA Medical Center, which includes one-on-one care coordination with a bilingual patient navigator.

Table 1 displays sample characteristics. Participants were on average 52 years old and married or cohabiting (54%). All participants self-identified as being Latina, and most women were foreign-born immigrants (93%) who primarily spoke Spanish (88%). Most women reported a household income of $20,000 or

less (75%), did not graduate from high school (59%), and were currently unemployed (78%). At the time of the initial interview, women had on average been diagnosed five months previously ($M = 4.94$, $SD = 4.09$) and undergone surgery two months previously. The majority of women reported having stage I (20%), II (24%), or III (16%) cancer and were in active medical treatment (tamoxifen 19%, chemotherapy 41%, radiation 27%). Many women went on to receive additional treatments after their Time 1 interview given the recency of their diagnoses. The majority of women reported no previous diagnosis of cancer (92%), and 46% had at least one comorbid medical illness. Women who completed both interviews did not differ significantly from women who completed only the Time 1 interview on any characteristic.

## Procedure

At Olive View–UCLA Medical Center, potential participants were introduced by a patient navigator to a bilingual study coordinator if they agreed to learn more about a study examining "adjustment in Latinas with breast cancer." If they chose to participate, women completed written informed consent at the hospital and were contacted within one week to schedule a first phone interview. Patients completed standardized assessments via interview format at two time points: within 18 months of diagnosis

Table 1
*Sample Characteristics (N = 95)*

| | | | |
|---|---|---|---|
| Age, mean (*SD*) | 52.01 (9.83) | Stage, % (*n*) | |
| Age at immigration, mean (*SD*) | 27.45 (11.56) | 0 | 9.20 (6) |
| Months since diagnosis, mean (*SD*) | 4.94 (4.09) | I | 29.30 (19) |
| Months since surgery, mean (*SD*) | 1.93 (3.17) | II | 35.30 (23) |
| Years since immigration, mean (*SD*) | 24.13 (12.72) | III | 23.10 (15) |
| Country of origin, % (*n*) | | IV | 3.10 (2) |
|   Mexico | 55.32 (52) | Surgery, % (*n*) | |
|   El Salvador | 17.03 (16) |   Lumpectomy | 54.70 (52) |
|   Other Central America | 13.83 (13) |   Mastectomy | 45.30 (43) |
|   Other South America | 7.43 (7) | Tamoxifen, % (*n*) | |
|   United States | 6.38 (6) |   Yes | 18.90 (18) |
| Household income, % (*n*) | |   No | 81.10 (77) |
|   Less than $10,000 | 46.00 (40) | Chemotherapy, % (*n*) | |
|   Between $10,000 and $20,000 | 35.60 (31) |   Yes | 41.10 (39) |
|   Between $20,000 and $40,000 | 17.20 (15) |   No | 58.90 (56) |
|   Between $40,000 and $80,000 | 1.10 (1) | Radiation, % (*n*) | |
| Insurance, % (*n*) | |   Yes | 27.70 (26) |
|   Private | 1.10 (1) |   No | 72.30 (68) |
|   Medicaid and Medi-Cal | 93.70 (89) | Previous Cancer, % (*n*) | |
|   Medicare | 1.10 (1) |   Yes | 7.40 (7) |
|   None | 4.20 (4) |   No | 92.60 (87) |
| Employment, % (*n*) | | Comorbidity, % (*n*) | |
|   Employed | 18.70 (17) |   Yes | 53.70 (44) |
|   Not employed | 81.30 (74) |   No | 46.30 (38) |
| Educational history, % (*n*) | | | |
|   Less than high school | 58.90 (56) | | |
|   Completed high school | 20.00 (19) | | |
|   Some college, no degree | 9.50 (9) | | |
|   2-year degree, vocational school | 5.30 (5) | | |
|   4-year degree | 4.20 (4) | | |
|   Graduate or professional degree | 2.20 (2) | | |
| Relationship status, % (*n*) | | | |
|   Single | 24.20 (23) | | |
|   Married or living with partner | 53.70 (51) | | |
|   Divorced | 15.80 (15) | | |
|   Widowed | 5.30 (5) | | |

(Time 1) and three months after the initial assessment (Time 2). A three month follow-up assessment was chosen because of retention concerns given the unique challenges inherent to a socioeconomically disadvantaged, underserved population (e.g., unstable housing, cell phone disconnection, and child/elderly care responsibilities). Our research group has previously published data examining the relationship of dispositional and cancer-specific emotional factors with adjustment across three months in women with breast cancer (Stanton, Kirk, et al., 2000; Stanton & Low, 2012), suggesting that this time frame allows meaningful interrogation of such constructs. Bilingual masters-level trained interviewers conducted both interviews by phone. Women were compensated $20 for Time 1 participation and $15 for Time 2 participation. Time 1 assessments required approximately one hour, and Time 2 assessments required approximately 30 min. Because interviewers were bilingual and all questionnaires were translated into Spanish, women had the option of participating in Spanish or English. Most women (88%) chose to be interviewed in Spanish.

## Measures

**Dispositional emotional expressivity.**   The Berkeley Expressivity Questionnaire (Gross & John, 1997) was administered at Time 1. This measure of dispositional emotional expressivity assesses stable, trait-like emotional tendencies. Responses on a Likert-type scale indicate how well a statement describes the respondent. The 16 items assess individual differences in emotional expressivity on three dimensions: negative expressivity (e.g., "Whenever I feel negative emotions, people can easily see exactly what I am feeling"), positive expressivity (e.g., "When I feel happy, my feelings show"), and impulse strength (e.g., "I experience my emotions very strongly"). Peer correspondence in ratings ($r = .58$) has been demonstrated (Gross & John, 1997). This scale demonstrates adequate internal consistency ($\alpha > .80$) and test–retest reliability ($r = .86$) across two to three months in previous research (Gross & John, 1995) and adequate internal consistency in this sample ($\alpha = .74$). A Spanish version of this questionnaire was created by forward- and back- translation conducted by two masters-level, native Spanish-speaking research coordinators (http://spl.stanford.edu/pdfs/BEQ/Spanish.pdf).

**Emotional approach coping.**   The Emotional Approach Coping scale (Stanton, Kirk, et al., 2000), comprised of the emotional processing and emotional expression subscales, was administered at Time 1. Women completed Likert-type scales with reference to their current experience of breast cancer, rating items on a scale from 1 (*I don't do this at all*) to 4 (*I do this a lot*). Each scale consists of four items to assess emotional processing (e.g., "I take time to figure out what I'm really feeling") and expression (e.g., "I feel free to express my emotions"). This measure demonstrates adequate internal consistency across studies of breast cancer patients ($\alpha > .70$; Stanton, Kirk, et al., 2000) and in this sample ($\alpha = .78$). A Spanish version of this questionnaire was created by forward- and back-translation conducted by doctoral-level, native Spanish-speaking graduate students in the UCLA Spanish Department.

**Avoidance coping.**   Three subscales of the COPE (Carver et al., 1989), denial, mental disengagement, and behavioral disengagement, were administered at Time 1. Each scale consists of four items to assess denial (e.g., "I pretend that it hasn't really

happened"), mental disengagement (e.g., "I turn to work or other substitute activities to take my mind off things"), and behavioral disengagement (e.g., "I admit to myself that I can't deal with it, and quit trying"). A composite scale of the 12 items demonstrates adequate internal consistency across studies of breast cancer patients ($\alpha > .70$; Stanton, Danoff-Burg, et al., 2000) and in this study ($\alpha = .78$). A previously translated Spanish version of the COPE was used for Spanish-speaking participants (http://www.psy.miami.edu/faculty/ccarver/sclSpanCOPESpain.html).

**Intrusive thoughts.**   The seven-item intrusive thoughts subscale of the Impact of Event Scale (IES) was completed at Time 1 and Time 2 to assess frequency of cancer-related intrusive thoughts and feelings over the past week (e.g., "Any reminder brought back feelings about it"; (Horowitz, Wilner, & Alvarez, 1979). Response options ranged from 0 *not at all* to 5 *extremely*. Internal consistency was adequate in this sample ($\alpha = .79$ at Time 1 and $\alpha = .86$ at Time 2). A previously validated Spanish version was used for Spanish-speaking participants (Báguena et al., 2001).

**Depressive symptoms.**   The 20-item Center for Epidemiologic Studies-Depression Scale (CES-D) was completed at both assessments in order to assess frequency of depressive symptoms during the past week (e.g., "I felt sad"; Radloff, 1977). Response options ranged from 0 *rarely or none of the time* to 3 *most of the time*. Internal consistency was adequate in this sample ($\alpha = .93$ at Time 1 and $\alpha = .94$ at Time 2). A previously validated Spanish version was used for Spanish-speaking participants (Golding & Aneshensel, 1989; Posner, Stewart, Marín, & Pérez-Stable, 2001).

**Demographic and cancer-related variables.**   Demographic variables assessed at Time 1 were age, education, employment, combined household income, insurance status, and relationship status. If the participant was an immigrant, we also assessed country of origin, age at immigration, and time since immigration. Cancer-related variables assessed via self-report at Time 1 were time since diagnosis, cancer stage, previous cancer diagnosis, metastasis, time since surgery, type of surgery (lumpectomy vs. mastectomy), comorbid medical diagnoses, and treatments received (tamoxifen, chemotherapy, radiation).

## Analytic Strategy

Descriptive statistics and internal consistency reliabilities were obtained on primary measures. Relations between the primary variables with sociodemographic and cancer-related variables (i.e., age, educational history, combined household income, time since diagnosis, cancer stage, type of surgery – lumpectomy vs. mastectomy, treatment with chemotherapy and/or radiation, and comorbid medical diagnosis) were assessed with zero-order correlations and revealed that combined household income was negatively correlated with coping with cancer through avoidance, $r = -.30$, $p = .006$; therefore, the effect of income on cancer-specific avoidance coping was covaried in the predictive model. All other associations were nonsignificant.

To examine the association of dispositional emotional expressivity, cancer-specific coping, and intrusive thoughts, a path model using maximum likelihood with missing values (MLMV) was fit to the data in STATA 12.0 (StataCorp). This estimation method allows data from all participants to be included in path models because it does not delete missing data in a listwise fashion as with maximum likelihood (ML) estimation (thus allowing each partic-

ipant's Time 1 data to be included in the model to estimate parameters related to Time 1 variables). Two separate models were tested to examine the unique relationship of dispositional emotional expressivity with both cancer-specific emotional approach and avoidance strategies. To determine the association of cancer-specific emotional approach and avoidance strategies with cancer-related intrusive thoughts at the 3-month follow-up (Time 2), a model examined the association of each type of cancer-specific coping with intrusive thoughts at Time 2 controlling for intrusive thoughts at Time 1. To examine the association of cancer-specific emotional approach and avoidance strategies with depressive symptoms at the 3-month follow-up (Time 2), the same model examined the association of each type of cancer-specific coping with depressive symptoms at Time 2 controlling for depressive symptoms at Time 1. The association of time since immigration and age at immigration with dispositional emotional expressivity was also examined to assess the relationship of cultural variables with dispositional emotional expressivity. Model fit was evaluated according to criteria proposed by Hu and Bentler (1999). A value of at least .95 for the Comparative Fit Index (CFI), and a value less than or equal to .06 for the Root Mean Square Error of Approximation (RMSEA) are used as indicators of good fit. A nonsignificant $\chi^2$ test statistic was also used to determine good model fit.

To evaluate dispositional emotion expressivity as a moderator of the relationship between cancer-specific coping and distress, hierarchical multiple regressions were conducted for each dependent variable: Step 1: Time 1 dependent variable; Step 2: cancer-specific coping (Time 1); Step 3: dispositional emotional expressivity (Time 1); and Step 4: the interaction between dispositional emotion expressivity and cancer-specific coping. Predictor variables and their interaction were centered to facilitate interpretation and reduce multicollinearity.

## Results

### Descriptive Statistics

Table 2 displays descriptive statistics for predictor and dependent variables. Women on average reported coping with their experience of cancer through emotional approach a "medium amount" ($M = 3.36$, $SD = .57$) and avoidance strategies "a little bit" ($M = 2.25$, $SD = .62$). Women also reported experiencing cancer-related intrusive thoughts "rarely" to "sometimes" within the past week at Time 1 ($M = 12.08$, $SD = 8.83$) and Time 2 ($M = 10.56$, $SD = 9.99$). There was a nonsignificant decrease in intrusive thoughts from Time 1 to Time 2, indicating a lack of im-

provement in intrusive thoughts between the time points (dependent $t(78) = -1.75$, $p = .084$). On average, women reported depressive symptoms slightly above the clinical cutoff of 16 at Time 1 ($M = 16.96$, $SD = 14.59$) and Time 2 ($M = 16.99$, $SD = 15.26$), with no significant change across assessments (dependent $t(76) = .45$, $p = .652$). The dependent variables evidenced sufficient variability to support examination of their predictors across time.

The bivariate correlations between the variables included in path model analyses are shown in Table 3. Dispositional emotional expressivity was positively correlated with both coping with cancer through emotional approach and avoidance as well as the dependent variables at Time 1. Cancer-specific emotional approach and avoidance coping were also positively correlated. Cancer-specific avoidance coping was significantly correlated with higher intrusive thoughts at Time 2 and marginally positively correlated with intrusive thoughts at Time 1, as well as significantly correlated with higher depressive symptoms at Time 1 and Time 2. Although directions of their relationships were negative, cancer-specific coping through emotional approach was not significantly correlated with intrusive thoughts or depressive symptoms at either assessment. Correlations between intrusive thoughts and depressive symptoms ranged from .49 to .72 ($p < .001$). Dispositional emotional expressivity was negatively correlated with time since immigration, $r = -.23$, $p = .042$. Combined household income was negatively correlated with coping with cancer through avoidance, $r = -.30$, $p = .006$, and income was included in the predictive model.

### Path Model Analyses

The path model testing the relationship of dispositional emotional expressivity with cancer-specific avoidance coping and, in turn, the association of avoidance coping with cancer-related intrusive thoughts at three months (Time 2) demonstrated good model fit: RMSEA = .055, CFI = .964, chi square = 9.02, $p = .251$. As shown in Figure 1, time since immigration was inversely associated with dispositional emotional expressivity ($z = -2.09$, $p = .037$). Dispositional emotional expressivity was associated with higher levels of coping with cancer through avoidance ($z = 2.53$, $p = .011$) and, in turn, avoidance predicted higher intrusive thoughts at three months ($z = 3.57$, $p < .001$), controlling for both the association of intrusive thoughts at Time 1 with intrusive thoughts at Time 2 and the inverse association of household income and cancer-specific avoidance. There were no significant effects of dispositional emotional expressivity on intrusive

Table 2
*Descriptive Statistics for Primary Predictor and Dependent Variables*

| Scale | Time point | M (SD) | Range | Paired t test |
| --- | --- | --- | --- | --- |
| Dispositional emotional expressivity | Time 1 | 4.87 (.92) | 1.83–6.50 | — |
| Cancer-specific emotional approach | Time 1 | 3.36 (.57) | 1.38–4.00 | — |
| Cancer-specific avoidance | Time 1 | 2.25 (.62) | 1.17–3.92 | — |
| Intrusive thoughts | Time 1 | 12.08 (8.83) | 0–31.00 | $t(78) = -1.75$, $p = .084$ |
| | Time 2 | 10.56 (9.99) | 0–35.00 | |
| Depressive symptoms | Time 1 | 16.96 (14.59) | 0–57.00 | $t(76) = .45$, $p = .652$ |
| | Time 2 | 16.99 (15.26) | 0–55.00 | |

Table 3
*Zero-Order Correlations Between Primary Predictor and Dependent Variables*

| Variable | 1. Dispositional emotional expressivity | 2. Cancer-specific avoidance | 3. Cancer-specific emotional approach | 4. Intrusive thoughts (Time 1) | 5. Intrusive thoughts (Time 2) | 6. Depressive symptoms (Time 1) | 7. Depressive symptoms (Time 2) |
|---|---|---|---|---|---|---|---|
| 1. | 1.0 | .26* | .36** | .24* | .18 | .26* | .08 |
| 2. | — | 1.0 | .30** | .19 | .44*** | .34** | .28* |
| 3. | — | — | 1.0 | −.12 | −.01 | −.17 | −.13 |
| 4. | — | — | — | 1.0 | .62*** | .63*** | .49*** |
| 5. | — | — | — | — | 1.0 | .61*** | .72*** |
| 6. | — | — | — | — | — | 1.0 | .64*** |
| 7. | — | — | — | — | — | — | 1.0 |

* $p < .05$.    ** $p < .01$.    *** $p < .001$.

thoughts at Time 2; thus, these effects were not included in the model. However, there was a significant positive indirect effect of dispositional expressivity on intrusive thoughts at Time 2 through its association with cancer-specific avoidance ($z = 2.06$, $p = .04$).

The path model testing the relationship of dispositional emotional expressivity with cancer-specific emotional approach coping and, in turn, the association of emotional approach coping with intrusive thoughts at three months (Time 2) did not produce good model fit: RMSEA = .104, CFI = .909, chi square = 10.09, $p = .073$. However, when the model was trimmed and the nonsignificant paths between cancer-specific emotional approach coping and intrusive thoughts at Time 1 ($z = -1.15$, $p = .249$) and Time 2 ($z = .47$, $p = .637$) were removed, the model demonstrated very good fit: RMSEA < .001, CFI = 1.000, chi square = .997, $p = .318$. As shown in Figure 2, similar to the previous model, time since immigration was inversely associated with dispositional emotional expressivity ($z = -2.17$, $p = .030$). In turn, dispositional emotional expressivity was associated with higher coping with cancer through emotional approach ($z = 3.61$, $p < .001$). However, coping with cancer through emotional approach was not significantly associated with intrusive thoughts at Time 1 or Time 2. A combined path model testing the relationship of dispositional emotional expressivity with both cancer-specific emotional approach and avoidance coping produced equivalent relations among variables but did not produce good model fit (RMSEA = .074, CFI = .925, chi square = 16.70, $p = .117$), most likely because of lack of statistical power.

Path analyses demonstrated no significant effects for dispositional emotional expressivity or either type of cancer-specific coping on depressive symptoms at three months controlling for Time 1 depressive symptoms ($p > .05$); these path models are not reported.

## Multiple Regression Analyses

Analyses examining the relations of dispositional emotional expressivity, cancer-specific avoidance, and their interaction with intrusive thoughts and depressive symptoms revealed a significant main effect of cancer-specific avoidance on greater intrusive thoughts at Time 2 ($\beta = .301$, $p = .002$), replicating results from the path analyses. No other significant main effects or interaction emerged ($p > .05$). Analyses examining the relations of dispositional emotional expressivity, cancer-specific emotional approach, and their interaction with intrusive thoughts and depressive symptoms revealed no significant main effects or interaction ($p > .05$).

## Discussion

The aim of the current study was to examine the association of dispositional emotional expressivity with cancer-specific coping through avoidance and emotional approach in order to predict cancer-related intrusive thoughts and depressive symptoms in primarily immigrant, Spanish-speaking, socioeconomically disadvantaged, Latina breast cancer patients. Overall, women reported high
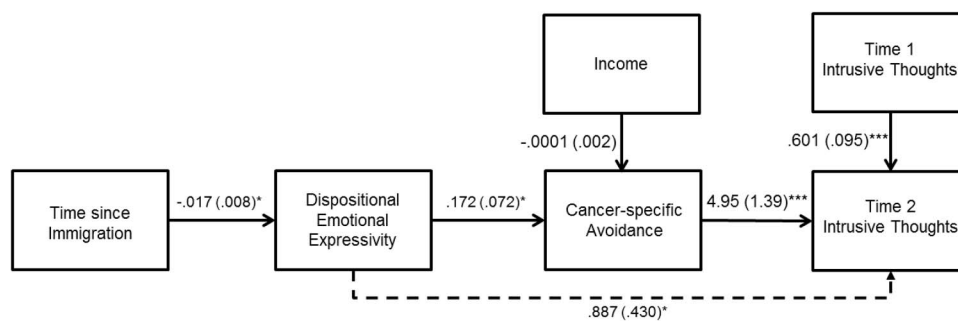


*Figure 1.* Final path model ($N = 95$) demonstrating the association of time since immigration, dispositional emotional expressivity, cancer-specific avoidance, and intrusive thoughts at Time 1 and Time 2. Unstandardized path coefficients with corresponding standard errors are shown. Dotted line represents indirect path of the effect of dispositional emotional expressivity on intrusive thoughts at time 2 through cancer-specific avoidance. * $p < .05$. *** $p < .001$.
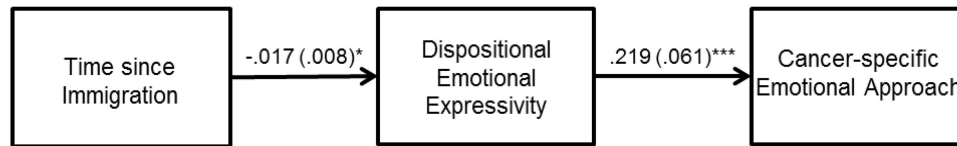
*Figure 2.* Final path model (*N* = 95) demonstrating the association of time since immigration, dispositional emotional expressivity, and cancer-specific emotional approach coping. Unstandardized path coefficients with corresponding standard errors are shown. * $p < .05$. *** $p < .001$.

distress and demonstrated a lack of improvement in distress at the 3-month follow-up. Women reported experiencing cancer-related intrusive thoughts at levels comparable with those reported by newly diagnosed breast cancer patients (Primo et al., 2000) and higher than levels typically reported by women further out from diagnosis (Cordova et al., 1995; Vickberg, Bovbjerg, DuHamel, Currie, & Redd, 2000). On average, depressive symptoms were above the clinically suggestive cutoff at both study entry and three months. Furthermore, although levels of emotional approach coping and dispositional emotional expressivity were closely comparable with levels observed in samples of women with and without breast cancer (Gross & John, 1997; Stanton, Danoff-Burg, et al., 2000; Stanton & Low, 2012), women reported higher levels of coping with cancer through avoidance than other samples of predominantly non-Latina white breast cancer patients (Carver et al., 1993; Stanton, Danoff-Burg, et al., 2000; Stanton, Danoff-Burg, & Huggins, 2002; Stanton, Kirk, et al., 2000; Stanton & Snider, 1993).

More recent immigration was associated with greater dispositional expressivity, which in turn was associated with coping with the cancer experience using both greater avoidance and emotional approach strategies. However, only avoidance-oriented coping predicted greater intrusive thoughts (but not depressive symptoms) at three months. Although past research suggests that congruency between high dispositional emotional expressivity and coping through emotional approach is associated with improved outcomes in chronically stressed individuals (Stanton, Danoff-Burg, et al., 2000; Stanton & Low, 2012; van Middendorp et al., 2008), nonsignificant moderation analyses did not support the congruency hypothesis in this sample.

To our knowledge, this is the first study that has examined the relationship of dispositional emotional expressivity with choice of cancer-specific coping. The current findings suggest that as dispositional emotional expressivity increases in Latina breast cancer patients so does the use of both avoidance-oriented *and* emotional approach strategies to cope with their diagnosis. Furthermore, avoidance-oriented and emotional approach coping strategies were significantly positively associated, which is in contrast to previous research (Stanton, 2011; Stanton, Kirk, et al., 2000). This finding may seem paradoxical. Given the context of a very recent diagnosis of cancer as well as relatively low environmental resources, however, it seems reasonable to conjecture that patients who have a general propensity to experience and express emotions strongly may be initially overwhelmed by their cancer-related emotions and consequently engage in avoidance as well as emotional expression and processing. Indeed, the negative association of household income and cancer-specific avoidance supports the notion that women with fewer resources are more likely to engage in avoidance when coping with a cancer diagnosis.

Consistent with hypotheses, the finding that cancer-specific avoidance predicted increased cancer-related intrusive thoughts is in line with previous findings that avoidance can paradoxically result in unwanted, intrusive thoughts (Wegner, Schneider, Carter, & White, 1987; Roth & Cohen, 1986). Avoidance of major life stressors also predicts later intrusive thoughts in individuals with cancer (Brewin, Watson, McCarthy, Hyman, & Dayson, 1998). Given that cancer-specific avoidance was both elevated and predictive of subsequent intrusive thoughts, it is likely a good target for intervention in this population. Interventions aimed at decreasing avoidance by promoting active coping skills (e.g., seeking social support, problem-solving, behavioral activation, cognitive reappraisal) have been shown to improve psychological adjustment in individuals with cancer (Burish, Snyder, & Jenkins, 1991; Nezu, Nezu, Felgoise, McClure, & Houts, 2003; Telch & Telch, 1986) and may be particularly beneficial for Latinas who demonstrate high levels of cancer-specific avoidance.

In contrast to hypotheses and previous research, avoidance coping did not significantly predict an increase in depressive symptoms. Overall, women reported high depressive symptoms at both study entry and the 3-month follow-up. The demonstrated lack of improvement in depressive symptoms may have limited our ability to predict change in symptoms over time by cancer-specific avoidance. Nevertheless, cancer-specific avoidance was positively correlated with depressive symptoms at both time points, indicating that avoidance is indeed associated with higher depressive symptoms. Of note, despite the positive correlation between intrusive thoughts and depressive symptoms at both time points, cancer-specific avoidance only predicted increased intrusive thoughts (not depressive symptoms) in path model analyses. According to the stress response theory proposed by Horowitz and colleagues (Horowitz, 1976; Zilberg, Weiss, & Horowitz, 1982), the presence of intrusive thoughts following a stressful event, such as a cancer diagnosis, is indicative of incomplete cognitive processing of the stressor. Intrusive thoughts are perpetuated by high levels of avoidance, which paradoxically may increase the frequency/intensity of intrusive thoughts and further impede cognitive processing and eventual resolution of this stress response. Additionally, the mental disengagement subscale of the avoidance coping measure in the current study contains several items that assess suppression of cancer-related thoughts. Thought suppression in particular has been consistently demonstrated to increase the frequency of unwanted thoughts (Abramowitz, Tolin, & Street, 2001; Wegner & Gold, 1995; Wegner et al., 1987). Thus, intrusive thoughts may be more sensitive to the influence of avoidance than depressive symptoms. Nevertheless, given that women demonstrated elevated depressive symptoms with no improvement over time, it is crucial that future research identify protective and risk factors for depression in this population.

In contrast to hypotheses, cancer-specific emotional approach coping did not predict decreased intrusive thoughts or depressive symptoms at three months. Although previous research has documented the protective benefit of emotional approach coping in the cancer context (Stanton, Danoff-Burg, et al., 2000), findings are not entirely consistent (Stanton, 2011). Evidence suggests that emotional approach coping is associated with indicators of positive adjustment in the cancer context, including positive mood (Stanton, Danoff-Burg, et al., 2000) and posttraumatic growth (Manne et al., 2005; Mosher, Danoff-Burg, & Brunker, 2006). Furthermore, it is possible that the lack of association between emotional approach coping and our outcomes of interest is driven by the unique challenges faced by this sample of socioeconomically disadvantaged, primarily Spanish-speaking immigrant Latina women. The unique challenges of this population facing a recent cancer diagnosis in the context of low resources may be better addressed by other forms of active coping. For example, problem solving and information seeking may be most beneficial for women confronting a recent cancer diagnosis in the context of low environmental resources. The current study may have also lacked statistical power as it has a smaller sample size than previous studies that support the benefit of congruency between dispositional emotional expressivity and coping through emotional approach on wellbeing (Stanton, Danoff-Burg, et al., 2000; Stanton & Low, 2012; van Middendorp et al., 2008). Future research should examine the potential adaptiveness of both emotional approach coping and other forms of active coping on additional markers of psychological adjustment, including indicators of positive adjustment.

More recent immigration was related to greater dispositional emotional expressivity. Research suggests that culture can modulate individuals' expression of emotion (Ekman, 1972; Gross & John, 1995). Gross and John (1995) posit that individual differences in emotional expression might arise from cultural display rules. Ethnographic studies have depicted some Latino cultures as expressing emotions strongly (Garza, 1978; Ramirez & Castaneda, 1974) and suggest that the cultural display rules in Latino cultures might permit greater expression of emotions. Although empirical investigations have not found greater emotional expressivity in Latino participants compared with non-Latino Whites (Gross & John, 1995; Matsumoto, 1993), these studies have employed American undergraduate student samples. Solely examining ethnicity may not adequately capture current cultural influences. In the present study, more recent immigration could reflect stronger ties to the woman's culture of origin and consequently greater dispositional emotional expressivity.

This study has several strengths, including its unique sample of underrepresented Latina breast cancer patients and longitudinal design. The inclusion of women of other races and ethnicities to conduct intergroup analyses, as well as follow-up assessments beyond three months, are recommended. In particular, a daily diary study may help researchers understand the dynamic of cancer-specific avoidance and emotional approach across time (i.e., the extent to which these coping processes coexist or oscillate over the course of hours, days, weeks). Importantly, future research should obtain cancer-related information via medical chart review as there are documented disparities in the ability of minority women, and in particular Latina women, to report accurate information regard-ing their breast cancer diagnosis (Freedman, Kouri, West, & Keating, 2015).

The current study also underlines the importance of considering context (e.g., time since diagnosis, environmental resources, immigration status) when interpreting the adaptiveness of cancer-specific coping strategies. Findings suggest that women who recently immigrated to the United States are more likely to experience and express their emotions strongly and may subsequently engage in both avoidance and emotional approach coping strategies to help manage their intense feelings. Avoidance-oriented coping in turn may uniquely predict an increase in cancer-related intrusive thoughts three months later. Thus, recent Latina immigrants could be an important group for targeted intervention aimed at reducing cancer-specific avoidance to decrease distressing intrusive thoughts and improve psychological wellbeing.

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