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## The Relationship Between Depressive Symptoms and Social Cognitive Processing in Partners of Long-Term Breast Cancer Survivors

Andrea A. Cohee<sup>1</sup>, Rebecca N. Adams<sup>2,3</sup>, Betsy L. Fife<sup>1</sup>, Diane M. Von Ah<sup>1</sup>, Patrick O. Monahan<sup>4</sup>, Kathleen A. Zoppi<sup>2</sup>, David Cella<sup>5</sup>, and Victoria L. Champion<sup>1</sup>

<sup>1</sup>Indiana University School of Nursing, Indianapolis, Indiana

<sup>2</sup>Indiana University School of Medicine, Indianapolis, Indiana

<sup>3</sup>Purdue University School of Science, Department of Psychology, Indianapolis, Indiana

<sup>4</sup>Indiana University School of Medicine, Department of Biostatistics, Indianapolis, Indiana

<sup>5</sup>Northwestern University, Chicago, Illinois (current location), NorthShore University, Evanston, Chicago (former location)

### Abstract

**Purpose/Objectives**—To determine 1) if depressive symptoms in partners of long-term breast cancer survivors (BCS) could be predicted by social cognitive processing theory, and 2) if partners of younger and older breast cancer survivors were differentially affected by the cancer experience.

**Design**—A cross-sectional, descriptive study utilizing self-report questionnaires.

**Setting**—Indiana University and 97 ECOG-ACRIN sites.

**Sample**—Partners of breast cancer survivors (n=508) diagnosed 3–8 years prior.

**Methods**—Secondary data mediation analyses were conducted to determine if cognitive processing mediated the relationship between social constraints and depressive symptoms. Age-related differences on all scales were tested.

**Main Research Variables**—Depressive symptoms; secondary variables included social constraints, cognitive processing (avoidance and intrusive thoughts), and potentially confounding variables.

**Findings**—Cognitive processing mediated the relationship between social constraints and depressive symptoms for partners ( $F(5,498) = 19.911$ ,  $R^2 = .167$ ,  $p < .001$ ). Partners of young BCS reported worse outcomes on all measures than partners of older breast cancer survivors

**Conclusions**—As predicted by the social cognitive processing theory, cognitive processing mediated the relationship between social constraints and depressive symptoms. Furthermore,

partners of younger BCS fared worse on social constraints, intrusive thoughts and depressive symptoms than partners of older BCS.

**Implications for Nursing**—Results provide support for using the social cognitive processing theory in intervention design with partners of long-term BCS to decrease depressive symptoms.

### Keywords

Partners; breast cancer; depressive symptoms; Social Cognitive Processing Theory; social constraints

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The number of breast cancer survivors in the United States continues to increase, with approximately 2.8 million women living with a history of breast cancer (Howlander, 2014). As this survivorship group expands, so does the number of partners affected by the illness. An estimated 20–40% of spouses suffer from mood disturbances, including depression, anxiety, and other affective disorders related to their spouses' illness (Braun, Mikulincer, Rydall, Walsh, & Rodin, 2007; Nakaya et al., 2010). Previous literature has reported that partners of breast cancer patients report more depressive symptoms than partners of healthy controls or the patients themselves (Moreira & Canavarro, 2013; Nakaya et al., 2010).

Although survivors' depressive symptoms tend to decrease over time, past research has found clinically significant levels of depression in 18–27% of survivors even years after diagnosis and treatment (Champion et al., 2014). Because past work has found varying degrees of concordance between survivor and spousal outcomes (Hagedoorn, Sanderman, Bolks, Tuinstra, & Coyne, 2008), it is important to determine if partners also deal with depressive symptoms thus making them vulnerable to long term quality of life problems. Past research has demonstrated that greater depression is associated with many quality of life outcomes such as sleep deprivation, fatigue, declines in general physical health (Northouse, Williams, Given, & McCorkle, 2012), and increased risk of cardiovascular disease among partners of cancer survivors (Dunn, Stommel, Corser, & Holmes-Rovner, 2009). Despite the large impact depressive symptoms have on quality of life for partners, little attention has been given to the mechanisms that may predispose a person to a depressive state.

According to the social cognitive processing theory (Lepore, 2001), depressive symptoms may in part be predicted by one's ability to discuss a traumatic event (i.e. cancer) with a significant other. Specifically, the social cognitive processing theory asserts that if one's attempts to talk about a stressful event are blocked by social constraints, or unsupportive responses such as avoidance, denial, or minimization, he or she may not be able to adequately process the event (Manne, 1999), leading to psychological distress. Expressly, when partners' communication about cancer-related stress is met with social constraints, they may experience prolonged cognitive processing, which is characterized by cycling of intrusive thoughts (i.e., repetitive, unbidden trauma-related thoughts or images) and cognitive avoidance (i.e., attempts to distance the individual from trauma-related thoughts and feelings). When prolonged, the cycling of intrusive thoughts and cognitive avoidance can lead to depressive symptoms (Lepore & Revenson, 2007). Thus, social constraints are hypothesized to increase depressive symptoms through incomplete cognitive processing- the

prolonged cycling of intrusive thoughts and cognitive avoidance of cancer-related concerns (Lepore, 2001). Figure 1 provides a depiction of proposed relationships.

The majority of research examining social cognitive processing theory has focused on survivor outcomes (Lepore & Revenson, 2007; Manne, Ostroff, Winkel, Grana, & Fox, 2005; Mosher et al., 2012; Myers et al., 2013). Although some studies have incorporated partner data, most were used to predict survivor outcomes, leaving a major gap in the literature (Badr, Pasipanodya, & Laurenceau, 2013; Pasipanodya et al., 2012). Two studies that examine partner outcomes were framed by the social cognitive processing theory. Sheridan and colleagues' (2010) found that intrusive thoughts mediated the relationship between social constraints and negative affect while avoidance mediated the relationship between social constraints and positive affect, supporting social cognitive processing theory (Sheridan, 2010). Robbins, López, Weihs, and Mehl, (2014) examined the effect of patient and partner discussions about cancer on depressive symptoms through natural observation (Robbins, López, Weihs, & Mehl, 2014). This study focused on support and emotional engagement rather than social constraints. Their results were consistent with the social cognitive processing theory for survivors (engagement in emotional disclosure and informational conversations predicted better survivor adjustment), but partner results were non-significant. Non-significant findings could be attributed to social constraints not being recorded and a small sample ( $n = 51$  spouses), thus necessitating further exploration of this theory with larger samples.

Although survivor research has found that age at diagnosis is an important factor in survivorship, most survivorship studies of partners have not yet addressed age differences. Some literature indicates age and life stage are largely responsible for one's adjustment to cancer. Previous studies reported young to middle-aged spouses experienced more psychological stress than older spouses (Harden, 2005; Nijboer et al., 2000). Similarly, young breast cancer survivors often are more distressed than their older counterparts due to decreased fertility following treatment, having young children at home, not expecting to have a serious illness at a young age, and job stressors (Gorman, Malcarne, Roesch, Madlensky, & Pierce, 2010; Reyes-Gibby, Anderson, Morrow, Shete, & Hassan, 2012). Partners of young survivors may be distressed for similar reasons, given the relationship between survivor and partner distress. If a relationship exists between social constraints, cognitive processing, and depressive symptoms in partners of long-term survivors, then future research should focus on developing interventions throughout survivorship to improve communication between survivors and their partners.

The **purpose** of the current study is to examine predictors of depression in partners of long-term breast cancer survivors. The **first aim** compares differences in partners of younger survivors and partners of older survivors. The **second aim** is to examine social cognitive processing theory (i.e., whether cognitive processing mediates the relationship between social constraints and depressive symptoms) in partners of breast cancer survivors.

## Methods

### Sample

Data for this study were taken from a larger study of BCS and their partners (Champion et al., 2014). A partner was eligible if currently living with the recruited survivor and self-identifying as a committed partner. Gender of the partner did not determine eligibility, nor was information on gender gathered from partners. Partners were asked to participate and completed informed consent and questionnaires after their spouses (BCS) were enrolled.

Using the ECOG Cancer Research Group (ECOG-ACRIN) database of 97 sites and the Indiana University Simon Cancer Center, we identified eligible BCS. Eligibility criteria for survivors included being diagnosed with breast cancer stages I–IIIa at age 45 years or younger (younger survivors) or ages of 55–70 (older survivors), being 3–8 years past initial treatment without a breast cancer recurrence, having a chemotherapy regimen of Adriamycin, Paclitaxel, and Cyclophosphamide to reduce treatment-related variance. “Younger” and “older” survivor groups were elicited to determine the differential impact of breast cancer on women who were most likely pre-menopausal and of child-bearing age at diagnosis and those who were more likely post-menopausal and past child bearing at diagnosis.

### Measures

Socio-demographic information was collected, including: current age, household income, education, race, religious affiliation, and the partnered survivor’s self-reported time since diagnosis. Bivariate correlations were used to determine significant relationships between demographic variables (identified in the literature) and depressive symptoms. All demographic variables that were related at  $p < .25$  with depressive symptoms were entered as covariates in the mediation model (Warner, 2012). We used this conservative approach because little is known about the effects of demographic variables on depressive symptoms in partners and spurious correlations could arise. Table 4 provides sample items for each of the following scales.

### Social Constraints

Social Constraints were measured using 14 items from the Lepore Social Constraints Scale. This scale asks the partner’s perception of the survivor’s constraining behaviors in the last four weeks on a scale ranging from 1 (never) to 4 (often) (Lepore & Ituarte, 1999). The items were summed after reverse scoring as necessary. Total scores range from 14 to 56, with higher scores indicating greater social constraints from survivors. Example questions include, how often does your partner (the survivor), “tell you not to worry so much about her breast cancer,” and “change the subject when you tried to discuss her breast cancer.” Construct validity has been established previously (Lepore & Ituarte, 1999). The Cronbach alpha coefficient for the sample was  $\alpha = .861$ .

### Cognitive Processing

Cognitive Processing was measured by the Impact of Event Scale (Hutchings, 2003), which includes two subscales of cognitive processing: cognitive avoidance and intrusive thoughts.

This scale has previously been used as a marker for prolonged or incomplete cognitive processing (Cohee et al., 2015; Lepore, 2001; Mosher et al., 2012). The **Cognitive Avoidance** subscale consists of 7 questions with responses ranging from 0 (not at all) to 4 (extremely), with higher scores indicating more avoidance. Sample questions include, “I felt as if my partner’s breast cancer hadn’t happened or wasn’t real,” and “I stayed away from reminders about my partner’s breast cancer.” The Cronbach alpha coefficient was  $\alpha = .758$ . The **Intrusive Thoughts** subscale consists of 8 questions using the same scoring. Sample questions include, “other things kept making me think about my partner’s breast cancer,” and “I thought about my partner’s breast cancer when I didn’t mean to.” The Cronbach alpha coefficient was  $\alpha = .844$ . Content, construct, and convergent validity have been previously established for the subscales (Sundin & Horowitz, 2002).

### Depressive symptoms

Depressive symptoms were measured using the Centers for Epidemiologic Studies-Depression Scale (Radloff, 1977; Steiner, Wagner, Bigatti, & Storniolo, 2014), a 20-item summated scale with possible scores from 0–60. Each item was rated on a 4-point scale from 1 (rarely or none of the time) to 4 (most or all of the time). A score above 16 is consistent with clinical depression. Partners were asked questions such as, how often they felt in the last week that, “everything I did was an effort,” and “I was bothered by things that usually don’t bother me.” Concurrent and construct validity were previously established in an oncology population (Hann, Winter, & Jacobsen, 1999). The Cronbach alpha coefficient for the sample was  $\alpha = .846$ .

### Recruitment Procedures

The study was approved through the Eastern Cooperative Oncology Group-American College of Radiology Imaging Network (ECOG-ACRIN), National Cancer Institute, and the institutional review boards of the parent site (a large, Midwestern university) and all ninety-seven cooperating ECOG-ACRIN sites. After an eligible survivor agreed to participate in the study, she was asked if she had a partner who could be contacted about participation. If a partner was available, a brochure was mailed and phone contact made. Once the partner gave verbal consent, a research assistant mailed the informed consent and questionnaire, which were returned in a postage-paid envelope. Follow-up reminder phone calls were made if the survey and informed consent were not received within two weeks.

### Data Analytic Plan

Descriptive statistics identified the presence and severity of depressive symptoms, demographic factors, social constraints, and cognitive processing components (intrusive thoughts and cognitive avoidance) in a sample of partners of breast cancer survivors. Bivariate correlations were computed between all demographic factors (current age, household income, years of education, race, religious affiliation, time since the survivor’s diagnosis) and depression to test for significant relationships.

For **Aim 1**, an ANOVA was conducted to determine group differences on all study variables. Groups were defined as either partners of younger survivors or partners of older survivors.

Contrasts between groups on all study variables- social constraints, cognitive avoidance, intrusive thoughts, and depressive symptoms- were analyzed.

For **Aim 2**, the Preacher and Hayes method was used for mediation analyses. While the causal steps approach to mediation analysis popularized by Baron and Kenny (1986) is often used for testing mediation, a newer method has gained favor by many researchers (Hayes, 2009). This method includes bootstrapping, which is an empirical method for estimating and testing indirect effects, as described by Hayes (2009). It is the preferred method of testing indirect effects due to its high statistical power and lack of assumption of normality in the sampling distribution. Quantification of the indirect effect is achieved through generation of a bias-corrected confidence interval (CI) (Hayes, 2013).

Therefore, mediation analyses using the “PROCESS” macro, developed by Hayes (2013) were conducted to determine if each of the components of cognitive processing (intrusive thoughts and cognitive avoidance) mediated the relationship between social constraints and depressive symptoms (Hayes, 2013). Parameter estimates and CIs of the total and indirect effects for this study were generated based on 5,000 random samples. All analyses were performed using SPSS® statistical software, version 22. Hypothesized relationships are illustrated in Figure 1.

## Results

Participants in this study included 508 partners (partners of younger survivors = 227, partners of older survivors = 281) of breast cancer survivors, representing 55.26% and 68.04%, respectively, of those eligible and approached. Being a partner of a younger survivor ( $F(1, 504) = 8.748, p < .003$ ) and having fewer years of education ( $r = -.074, p = .099$ ) were related to greater depressive symptoms. These two demographic variables were the only that met inclusion criteria and were entered as covariates in the mediation analyses. See Table 1 for complete demographic information. A clinically significant score indicating depression is generally defined as a score at or above 16 on the CES-D (Pinquart & Sörensen, 2003). Scores between groups were significantly different ( $t(396) = 2.861, p = .004$ ), with 7.6% of partners of younger survivors ( $\mu = 8.795, SD = 8.486$ ) scoring at or above 16, compared to just 6.5% of partners of older survivors ( $\mu = 6.881, SD = 6.024$ ). Additionally, 33 (14.5%) of partners of younger survivors and 28 (10.1%) of partners of older survivors reported ever having been diagnosed with depression.

While a useful tool for distress and PTSD, the IES has also been used to operationalize cognitive processing within the cancer literature (; ; ;). In our sample, scores on the IES were generally low, indicating low levels of intrusive thoughts and cognitive avoidance, thus, low levels of distress. Clinical cut points on the IES as a distress measure begin at  $\mu = 9$ , indicating mild distress. The mean scores for partners on the IES were sub-clinical for distress with  $\mu = 8.61$ .

Scores for social constraints were generally low for each partner group, with  $\mu = 20.33$  for partners of younger survivors, and  $\mu = 19.09$  for partners of older survivors (possible scores range 14 to 56).

### Aim 1: Determine Group Differences

Significant differences were found between partners of younger survivors and partners of older survivors on most study variables (social constraints, intrusive thoughts, and depressive symptoms). The partners of younger survivors reported more depressive symptoms ( $F(1, 504)=8.748, p=.003$ ), higher scores on intrusive thoughts ( $F(1, 503)=5.280, p=.022$ ), and more social constraints ( $F(1, 505)=5.343, p=.021$ ). Only cognitive avoidance was not significantly different for the partner groups ( $p=.297$ ). See Table 2 for descriptive statistics on all scales for both partners of younger survivors and partners of older survivors.

### Aim 2: Mediation Analysis

Partners of breast cancer survivors who reported more social constraints reported more intrusive thoughts (unstandardized  $b$  path coefficient = 0.304,  $SE=0.032$ ), which in turn led to more depressive symptoms ( $b=0.386, SE=0.085$ ). Social constraints indirectly influenced depressive symptoms through intrusive thoughts (point estimate of indirect effect = 0.117,  $SE=0.036, p<.001, 95\% CI = 0.057$  to 0.198). After accounting for this mechanism, there was still a significant effect of social constraints on depressive symptoms (point estimate of direct effect = 0.257,  $SE=0.059, p<0.001, 95\% CI = 0.142$  to 0.372), such that partners who perceived more social constraints from their partnered survivors also experienced more depressive symptoms. Cognitive avoidance did not mediate the relationship between social constraints and depressive symptoms ( $CI = -0.080$  to 0.094). Group identification-whether one was a partner of a younger survivor or a partner of an older survivor-was significant in the mediation model with partners of younger survivors reporting more depressive symptoms ( $CI = -2.477$  to  $-0.086$ ), while education was not significant ( $CI = -0.246$  to 0.178).

See Figure 1 for model schema and Tables 3 for mediation model coefficients.

## Discussion

This study sought to determine if social cognitive processing theory was an efficacious framework from which to view depressive symptoms in partners of long-term breast cancer survivors. Specifically, we proposed that intrusive thoughts and cognitive avoidance would mediate the relationship between social constraints and depressive symptoms in a large sample of partners of long-term breast cancer survivors. Our results partially support proposed theoretical relationships between depressive symptoms and social cognitive processing variables. Intrusive thoughts, but not cognitive avoidance, mediated the relationship between social constraints and depressive symptoms as illustrated in Figure 1.

The relationship between social constraints and depressive symptoms remained significant in our model even after accounting for intrusive thoughts, highlighting the direct effect that negative responses from spouses play in the psychological wellbeing of partners. Unlike breast cancer survivors who may communicate their cancer-related fears to a wider circle of supports, partners may rely more on communicating their fears to their spouses (Robbins, López, Weihs, & Mehl, 2014; Sheridan, Sherman, Pierce, & Compas 2010). Because partners of breast cancer survivors disclose their cancer-related fears primarily to their

spouses, social constraints from survivors may have a greater impact on their depressive symptoms than with survivors. Thus, interventions designed to address communication style (i.e. decreasing social constraints) within couples who have experienced breast cancer may promote cognitive processing and directly affect depressive symptoms in partners.

The social cognitive processing theory was useful in understand the predictors of long-term problems resulting from a spouse's breast cancer diagnosis. Although the theory has been gaining recognition in the oncology literature for predicting negative outcomes in patients and survivors (Adams, Winger, & Mosher, 2014), it has not been widely tested in partners. Our results are consistent with work by Sheridan, Sherman, Pierce, and Compas (2010), who also determined the relationship between social constraints and a poor psychological outcome (negative affect) was mediated by intrusive thoughts (Sheridan, Sherman, Pierce, & Compas 2010). Cognitive avoidance, in our sample, did not mediate the relationship between social constraints and depressive symptoms when both variables were entered into the model because cognitive avoidance and intrusive thoughts shared variance. Experiencing persistent, unwanted thoughts, or intrusions, about cancer may cause more distress than if the partner is able to avoid thinking about cancer. The current study is one of only two found in the oncology literature that solely examines the relationship between social constraints experienced by partners and partner outcomes. Furthermore, this study advantageously studied partners of long-term survivors, a group whose depressive symptoms have largely remained unstudied. While the occurrence of clinically significant levels of depressive symptoms were comparable to national averages among partners of older survivors, (Centers for Disease Control and Prevention, January 6, 2012) partners of younger survivors reported significantly higher levels of depressive symptoms than both the national average and partners of older survivors.

While partners of younger breast cancer survivors and partners of older breast cancer survivors did not differ on cognitive avoidance, partners of younger survivors did report significantly more depressive symptoms, intrusive thoughts, and social constraints than partners of older survivors. Partners may not expect their spouses to be diagnosed with a life-threatening illness at a young age. In earlier developmental stages, more gains (i.e. good health, child rearing, career advancement, etc.) than losses (i.e. breast cancer) are expected in young partners, and losses can be disruptive (Harden, 2005). Outside of the oncology literature, one study of partners of Parkinson's patients (Carter, Lyons, Stewart, Archbold, & Scobee 2010) also found younger spouses were at greater risk for distress (Carter, Lyons, Stewart, Archbold, & Scobee, 2010). Young partners reported more strain due to a lack of personal resources, and lower levels of positive outcomes such as mutuality and derived meaning from the illness (Carter, Lyons, Stewart, Archbold, & Scobee, 2010).

## Limitations and Implications for Future Research

While this unique data set did allow us to examine whether cognitive processing mediated the relationship between social constraints and depressive symptoms in both partners of younger breast cancer survivors and partners of older breast cancer survivors, there are several limitations. First, partners were not asked to disclose their gender for this study. Therefore, it is unknown if a sample of both men and women partners of BCS would



respond differently to any of the measures. Second, it is possible that additional variables not included in the models could add to the understanding of depressive symptoms in partners, including marital quality, job worries, and fears for the survivors' well-being (Lewis, Fletcher, Cochrane, & Fann, 2008). Third, data from this study were taken from a cross-sectional non-experimental design, limiting our ability to draw causal conclusions. Longitudinal studies are needed in order to understand the nature of the relationship between depressive symptoms and social cognitive processing in partners. Fourth, our sample was primarily Caucasian and not representative of the larger population. Demographically representative samples of partners are needed in order to understand the influence race, education, income, religious affiliation, and others have over depressive symptoms.

## Implications for Nursing Practice

The results of this study have several implications for nursing practice. First, depression is prevalent in partners of BCS but largely untreated. The fact that depression remained long after initial treatment and diagnosis in this study should prompt nurses to assess both the BCS and partner throughout the survivorship trajectory. Nurses often have an opportunity to interact with both BCS and partners and may be able to assess communication skills, which impact both cognitive processing and depressive symptoms. With the understanding that social constraints negatively impact cognitive processing and depressive symptoms, nurses can stress the importance of engaging in open communication rather than social constraints. Specifically, nurses can encourage and facilitate open communication about cancer-related concerns between BCS and their partners. Nurses can provide examples of social constraints to survivors and partners, and discuss the negative psychological impact of those behaviors. The nurse can also offer suggestions for alternative responses that are supportive and encourage more open communication. By promoting open communication between survivors and partners and educating survivors and spouses on the harmful effects of social constraints, nurses may decrease these negative outcomes.

## Conclusion

Findings from this study support the use of the social cognitive processing theory as a valuable mechanism for studying both direct and indirect relationships between social constraints, intrusive thoughts, and cognitive avoidance and depressive symptoms in partners of long-term breast cancer survivors. Furthermore, we found that intrusive thoughts, but not cognitive avoidance, mediated the relationship between social constraints and depressive symptoms. Additionally, the direct relationship between social constraints and depressive symptoms remained significant in analyses, highlighting the need for interventions to enhance open cancer-related communication within couples. Finally, partners of younger survivors reported more social constraints, intrusive thoughts, and depressive symptoms than partners of older survivors. Partners of younger survivors may fare worse, necessitating further research into ways of helping them cope with cancer, as they may be a particularly important group to target in interventions.

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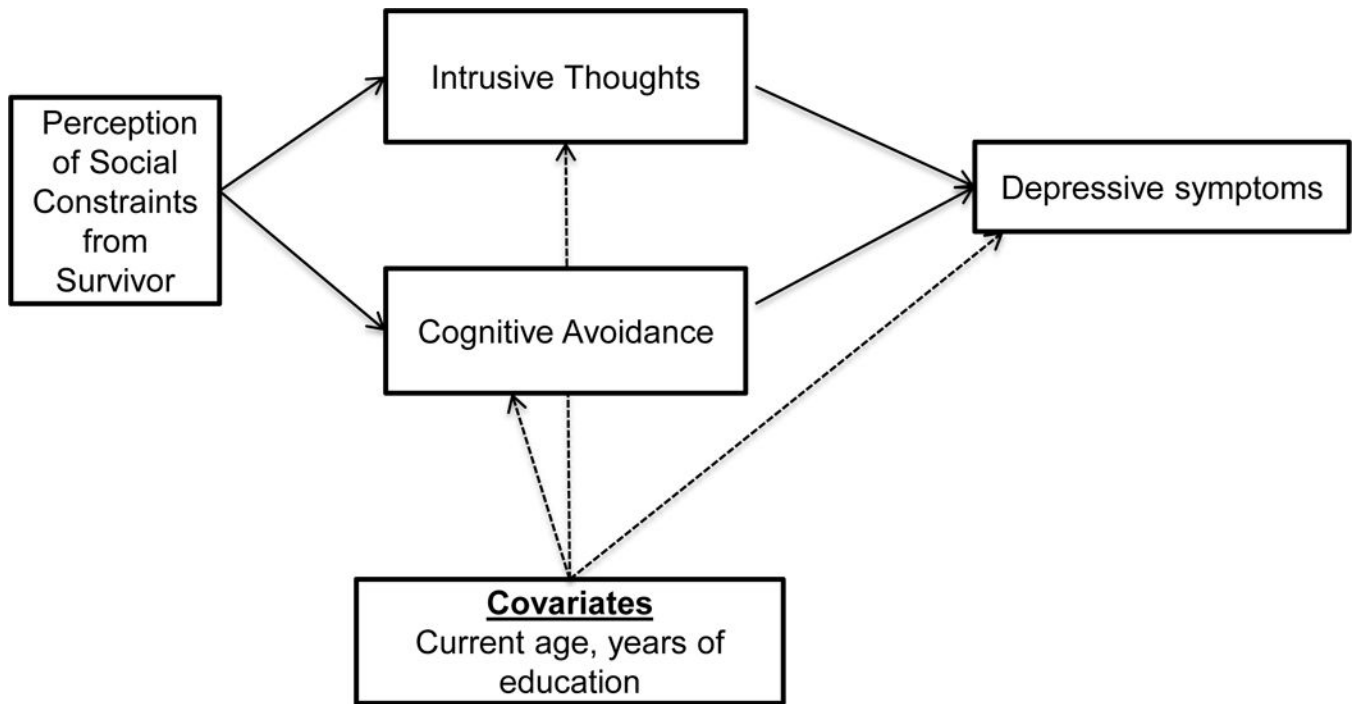
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### Knowledge Translation

- Partners of long-term BCS report clinically significant depression.
- Partners of younger BCS report higher levels of depressive symptoms than the national average and than partners of older survivors.
- Addressing social constraints within the dyad may improve depressive symptoms.



**Figure 1.**  
Proposed Relationships of Mediation Analysis

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**Table 1**

Demographic Information for Partners of Younger Breast Cancer Survivors and Partners of Older Breast Cancer Survivors

Variable	YP (n=226)	OP (n=281)
Race, No. (%)		
Caucasian	209 (92.1)	265 (94.3)
Black or African American	7 (3.1)	3 (1.1)
Asian	2 (0.9)	0
Other	8 (3.5)	13 (4.6)
Education (yrs), mean ( <i>SD</i> )	14.88 (2.6)	14.66 (3.0)
Income, No. of Dyads (%)		
<=\$50,000	30 (13.6)	94 (35.3)
>\$50,000 and <=\$100,000	109 (49.3)	116 (43.6)
>\$100,000	82 (37.1)	56 (21.1)
Religious affiliation, No. (%)		
Christian	189 (83.6)	246 (88.8)
Jewish	8 (3.5)	5 (1.8)
Other	3 (1.3)	2 (0.7)
No religious affiliation	26 (11.5)	24 (8.7)
Current age, mean ( <i>SD</i> )	48.0 (7.2)	67.8 (6.74)

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**Table 2**

Mean, Standard Deviation, and Range of All Scales for Partners of Younger Breast Cancer Survivors and Partners of Older Breast Cancer Survivors

Measure	YP	OP	t-test
	Mean (SD)	Mean (SD)	
Lepore Social Constraints Scale	20.33 (6.34)	19.09 (5.53)	2.32 *
Intrusive Thoughts <sup>a</sup>	4.89 (5.15)	3.91 (4.09)	2.33 *
Cognitive Avoidance <sup>a</sup>	3.69 (3.99)	3.31 (3.63)	Ns
CES-D <sup>b</sup>	8.80 (8.49)	6.78 (6.02)	3.02 *

\*  $p < .05$

<sup>a</sup> - Impact of Events Scale

<sup>b</sup> - Centers for Epidemiologic Studies-Depression Scale

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**Table 3**

Model Coefficients for Mediation Analysis for All Partners

	$M^1$ (Intrusive Thoughts)		$M^2$ (Cognitive Avoidance)	
	Coeff.	SE	Coeff.	SE
Antecedent (current age)	-.010	.045	.832	.032
Antecedent (years of education)	-.0138	.126	.276	.090
$X$ (Social Constraints)	$a$ .308	.051	.000	$c'$ .325
$M^1$ (Intrusive Thoughts)	$b^1$ -	-	-	$b^1$ -
$M^2$ (Cognitive Avoidance)	$b^2$ -	-	-	$b^2$ -
Constant	$i^1$ 1.137	3.281	.729	$i^2$ -0.647
	$R^2=.157$		$R^2=.280$	
	$F(3, 222) = 13.58, p<.001$		$F(3, 222) = 28.769, p<.001$	

$Y$ (Depressive Symptoms)	
Coeff.	$p$
Antecedent (current age)	-.094
Antecedent (years of education)	.296
$X$ (Social Constraints)	.291
$M^1$ (Intrusive Thoughts)	.372
$M^2$ (Cognitive Avoidance)	.003
Constant	1.157
	$R^2=.147$
	$F(5, 220)=7.55, p<.001$

$a$  Unstandardized path coefficient for the relationship between social constraints and intrusive thoughts

$a$  Unstandardized path coefficient for the relationship between social constraints and cognitive avoidance

$c'$  Unstandardized path coefficient for the relationship between social constraints and depressive symptoms

$b^1$  Unstandardized path coefficient for the relationship between intrusive thoughts and depressive symptoms

$b^2$  Unstandardized path coefficient for the relationship between cognitive avoidance and depressive symptoms

$i^1$  Unstandardized path coefficient for the relationship between the constant and intrusive thoughts

$i^1$  Unstandardized path coefficient for the relationship between the constant and cognitive avoidance

$i^2$  Unstandardized path coefficient for the relationship between the constant and depressive symptoms

**Table 4**

## Sample Items for Each Scale

Scale	Sample Items	alpha
Lepore Social Constraints Scale	How often in the last four weeks did your partner... <ol style="list-style-type: none"> <li>1 "Minimize your problems"</li> <li>2 "Seem to be hiding her feelings"</li> <li>3 "Tell you not to think about her breast cancer"</li> </ol>	$\alpha=.861$
Impact of Event Scale-Intrusions	How distressing has each item been in the last four weeks... <ol style="list-style-type: none"> <li>1 "I thought about my partner's breast cancer when I didn't mean to"</li> <li>2 "Pictures of my partner's breast cancer popped into my mind"</li> <li>3 "Any reminder brought back feelings about my partner's breast cancer"</li> </ol>	$\alpha=.844$
Impact of Event Scale-Avoidance	How distressing has each item been in the last four weeks... <ol style="list-style-type: none"> <li>1 "I stayed away from reminders about my partner's breast cancer"</li> <li>2 "I tried not to think about my partner's breast cancer"</li> <li>3 "I tried to remove my partner's breast cancer from my memory"</li> </ol>	$\alpha=.758$
Centers for Epidemiologic Studies-Depression	How often did you feel or behave this way in the past week... <ol style="list-style-type: none"> <li>1 "I could not get going"</li> <li>2 "I had crying spells"</li> <li>3 "I felt my life had been a failure"</li> </ol>	$\alpha=.846$