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Ethnic Differences in Types of Social Support from Multiple Sources After Breast Cancer Surgery

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Abstract

Objectives—Diagnosis of and treatment for breast cancer (BCa) may require psychological adaptation and often involve heightened distress. Several types of social support positively relate to psychological adaptation to BCa, and negative support is associated with poorer adaptation. Although Hispanic women report greater distress than non-Hispanic White (NHW) women after diagnosis of BCa, no studies have examined ethnic differences in types of social support received from varying sources after surgery for BCa.

Design—Hispanic (N=61) and NHW (N=150) women diagnosed with early-stage BCa self-reported emotional, informational, instrumental, and negative support from five sources. Ethnic differences in levels of social support were compared using multiple regression analysis.

Results—When controlling for age, income, days since surgery, and stage of disease in multivariable models there were no ethnic differences in levels of *emotional* support from any source. Hispanic women reported greater *informational* support from adult women family members and children and male adult family members than did NHW women. *Instrumental* support from adult women family members was also greater among Hispanic than NHW women. Hispanic women reported higher *negative* support from husbands/partners and from children and male adult family members. When number of years in the U.S. was controlled, Hispanic women showed greater *informational* support from adult women family members, children and male adult family members, and friends. *Instrumental* support from adult women family members remained greater in Hispanic women, but *negative* support no longer differed.

Conclusion—Family is a greater source of informational and instrumental support for Hispanic than NHW women. Hispanic women reported higher negative support from male sources than did NHW women. Level of support from different sources may also depend on time spent in the U.S. Longitudinal studies are needed to determine whether patterns and sources of social support shift over the course of BCa treatment.

Keywords

Hispanic/Latino; ethnicity; breast cancer; social support; acculturation

1. Introduction

Breast cancer (BCa) is the second leading cause of cancer deaths among U.S. women (American Cancer Society 2012). BCa incidence is lower in high versus low socio-economic status women (Borugian et al., 2005), yet BCa incidence and mortality are lower in Hispanic relative to non-Hispanic White (NHW) women (American Cancer Society, 2012). Women experience distress during BCa diagnosis and treatment (Andrykowski et al. 2008) and, despite their survival advantage, Hispanic women report greater distress than NHW women after early-stage BCa surgery (Carver, Lehman, and Antoni 2003). Causes of this disparity are unknown. Because Hispanics represent an increasingly large number of U.S. BCa patients (American Cancer Society 2012), recent research has focused on the role of ethnicity in adaptation to BCa, which could address such disparities (Lopez-Class et al. 2012).

Intrapersonal and interpersonal factors can influence how women adapt to BCa diagnosis and treatment (Andrykowski et al. 2008). Among these, social support relates to better psychological adaptation (Shapiro et al. 2001). Social support encompasses interactions with others who listen and provide reassurance (emotional support), impart advice (informational support), and give tangible assistance (instrumental support) (Helgeson 2003). In contrast, negative support, which is associated with greater psychological distress, refers to unsupportive reactions from others, including criticism (Manne et al. 2005).

No studies have examined whether levels of each social support type vary between Hispanic and NHW women undergoing BCa treatment. Although trends suggest that Hispanics receive greater social support than NHW women from partners and relatives (Sammarco and Konecny 2010), little research has investigated such ethnic differences in levels of each support type from specific social network members. This study addresses this issue by examining ethnic differences in each form of social support, received from multiple sources, in the context of primary non-metastatic BCa treatment.

Levels of social support from various sources may differ between Hispanic and NHW women due to Hispanic cultural values. *Familismo* values emphasize that nuclear and extended families should be included in all aspects of caregiving, from daily self-care assistance to decision-making involvement (Galanti 2003). Emphasis on familial caregiving may lead Hispanics to refrain from seeking support from external sources (Weisman et al. 2005). *Machismo*, the conception of masculinity in Hispanic culture, may include qualities such as emotional distancing and authoritarianism (Torres, Solberg, and Carlstrom 2002),

which are associated with conflict in marital relationships and may translate into negative support (Tamez 1981). Given that receiving support can create opportunities for conflict, Hispanic women may simultaneously experience higher positive and negative support levels from family than NHW women.

This study tested for ethnic differences in perceived emotional, informational, instrumental, and negative support from multiple sources. We hypothesized that Hispanic women would report greater emotional support from husbands/partners and other family versus NHW women, who would report greater emotional support from friends. We also hypothesized that Hispanic women would report greater informational and instrumental support from family and less from friends than NHW women. Finally, we hypothesized that Hispanic women would report greater negative support from husbands/partners versus NHW women.

2. Methods

2.1 Participants and Procedures

Women diagnosed with early-stage BCa (stage 0 - III) were recruited from South Florida cancer treatment centers for a behavioral intervention trial between 1998 and 2005 (approved by the Institutional Review Board at the University of Miami).¹ Figure 1 displays enrollment details. Phone screens were conducted with 502 women: 156 declined to participate, and 106 women were excluded for the following reasons: lack of English fluency, already starting chemotherapy/radiation, previous diagnosis of another significant cancer or severe psychiatric disorder. Ultimately, 240 women enrolled 2-10 weeks after BCa surgery. Participants were compensated \$50 for the assessment. These analyses included data from 61 participants self-identified as Hispanic and 150 participants self-identified as NHW, and excluded 29 women of other ethnicities and races. Only the 134 married or partnered women were included in husbands/partner support analyses.

2.2 Perceived Social Support

The Sources of Social Support Scale (SSSS; Kinsinger et al. 2011) divides social support into support type and distinguishes between support sources within type. Self-report items measured emotional (listening), informational (advice), instrumental (tangible assistance), and negative (arguing and criticism) support. Participants rated each item five times, once in reference to each support source. Support sources were grouped as husband/partner, adult women family members, children and male adult family members, friends, and health care providers. Table 1 displays sample items. Participants rated each item on a 5-point Likert-type scale ranging from 1 (not at all) to 5 (a lot). Items measuring the same support type were averaged into subscales, higher scores indicating more support. The sample largely overlapped with one previously analyzed by Kinsinger et al. (2011); therefore the same factor structure was used.

Six *emotional support* items assessed degree of comfort expressing concerns to the support source, and whether the support source responded with encouragement and reassurance.

¹All data analyzed in this study was collected prior to randomization, and Hispanic and NHW women did not differ on group assignment ($p=0.617$).

Two reverse-coded items measured the support source's tendency to withdraw from or disappoint the participant. One *informational support* item evaluated how much the support source advised the participant or imparted factual information. An *instrumental support* item asked how much tangible assistance participants received. *Negative support* included 2 items assessing arguments with and criticism from the support source.

Higher scores of all support types, except negative support, were positive. Internal consistency of the subscales was adequate in a sample of partnered women with BCa that included Hispanic and NHW women (Kinsinger et al. 2011): emotional support $\alpha=0.90$; negative support $\alpha=0.81$. In this sample, internal consistency of the subscales ranged from acceptable to excellent (see Table 1).

2.3 Data Analytic Approach

Independent sample t-tests and chi-square tests analyzed whether Hispanic and NHW women differed on demographic and medical variables. All variables were normally distributed (skewness < 3.0, kurtosis < 8.0; Kline 2011) after outliers 2.5 or more standard deviations from the mean were winsorized (Wilcox 1993). Multiple imputation pooling 21 iterations (Rubin 1987) accounted for all missing data (range = 0–27.0% missing). Three sets of regressions compared Hispanic and NHW women in social support type received from each source. First, to test the hypotheses, univariable analyses included ethnicity dummy coded (NHW=0, Hispanic=1) as the independent variable and each social support type from each source as the dependent variable. Secondly, to test whether results held after the addition of covariates selected based on theoretical associations with outcome variables, multiple regressions included age, income, days since surgery, and disease stage in the first block, ethnicity as the independent variable in the second block, and social support as the outcome variable. Lastly, given that NHW women had lived in the U.S. longer on average, which might have diminished Hispanic cultural tendencies, secondary multivariable analyses were conducted with the addition of years in the U.S. to the first block.

3. Results

3.1 Sample Characterization

Table 2 displays self-reported demographic and medical variables. Disease stage and surgery type were verified from medical charts when available. Disease stage was classified using the TNM classification, which categorizes stages based on tumor size, and whether the tumor has invaded regional lymph nodes and metastasized to other body parts (Singletary et al. 2002). Average first-born child's age indicated that participants' children were primarily young adults ($M=26.36$, $SD=11.70$). The largest subsample of Hispanic women who reported national origin was Cuban-American.

Table 2 presents pre-winsorization and pre-imputation means and standard deviations of demographic and medical variables. The Hispanic sample was slightly younger on average, $p<.001$. NHW women had lived a greater number of years in the U.S. on average before and after controlling for age, $p<.001$. Hispanic and NHW women differed on cancer stage $p=0.038$, with NHW women more likely to be diagnosed with stage I cancer, but did not

differ in prevalence of other stages. Descriptive statistics of SSSS subscales pre-winsorization and pre-imputation are in Table 1.

3.2 Results of Analyses

Univariable analysis results are displayed in Table 3 and multivariable analysis results are in Table 4 and Figures 2(a) – 2(d). Hispanic and NHW women did not differ on emotional support from any source before or after addition of covariates. Univariable analyses showed that Hispanic women reported greater informational support from adult women family members and from children and male adult family members than did NHW women, and these findings held after covariates were added. Hispanic women reported higher instrumental support from adult women family members and from children and male adult family members than did NHW women, although the children and male adult family members finding was not significant following addition of covariates. Negative support from husbands/partners, adult women family members, and children and male adult family members was significantly higher among Hispanic than among NHW women, although the difference in adult women family member negative support was not significant after control variables were added. No other difference reached statistical significance.

Controlling for years in the U.S., women still did not differ on emotional support (see Table 5). Hispanic women continued to show greater informational support from adult women family members and children and male adult family members, but also showed greater informational social support from friends. Instrumental social support from adult women family members remained significant. However, negative support from husbands/partners and children and male adult family members no longer differed once years in the U.S. was controlled.

4. Discussion

This is the first study to examine whether Hispanic and NHW women in primary treatment for early-stage BCa differ in four types of perceived social support provided by five support sources. Emotional support did not differ between groups, regardless of source. Therefore, the hypothesis that Hispanic women would report greater emotional support from husbands/partners and less from friends as compared with NHW women was not supported. The absence of ethnic differences in emotional support is consistent with prior findings that emotional support from family, friends, and other sources does not differ between Anglo-Americans and English-speaking Mexican Americans (Griffith 1984).

The hypothesis that Hispanic women would report greater informational and instrumental support from family and less from friends versus NHW women was partially supported. When control variables were included, informational support from adult women family members and children and male adult family members was higher among Hispanic women, but there was no difference in informational support from friends. Instrumental support from adult women family members was also higher in Hispanic women, though there was no difference in instrumental support from friends. Given the strength of *familismo* in Hispanic culture (Gallagher-Thompson et al. 2003), it is not surprising that the Hispanic participants reported greater social support from family. It is possible that Hispanic cultural emphasis on

family relations explains differing levels of informational and instrumental support from family in Hispanic versus NHW women.

Finally, it was hypothesized that Hispanic women would report greater negative support from husbands/partners than would NHW women. Indeed, when controlling for covariates, Hispanic women reported greater negative support from husbands/partners and also from children and male adult family members than did NHW women. This suggests that Hispanic women recovering from early-stage BCa surgery experience more interpersonal conflict with family members than NHW women. This finding is consistent with research that Hispanic caregiving families in the U.S., specifically of Cuban-American origin, show poorer conflict resolution than NHW families (Mitrani et al. 2008). It is interesting to note that in the present study, both sources of differential negative support—husbands/partners and children and male adult family members—included adult male relatives. Thus, it is possible that the trait of *machismo* contributed to increased negative interactions between Hispanic women and male family members (Galanti 2003).

After controlling number of years in the U.S., Hispanic women again demonstrated greater informational support from adult women family members and children and male adult family members, but also reported greater informational support from friends. It is possible that English-speaking Hispanic women may have a greater need for information than NHW women (Janz et al. 2008), or may place high value on opinions of social network members during decision-making. This study is the first to demonstrate that when both income and years in the U.S. are controlled for, Hispanic women recovering from BCa surgery actually exceed their NHW counterparts in levels of perceived informational support from adult family members, children, and friends, and of instrumental support from adult women family members.

It should be noted that years in the U.S. did not significantly correlate with negative support from husbands/partners or children and male adult family members, though controlling for it did render the effect for these sources nonsignificant. However, years in the U.S. has been criticized as a proxy for acculturation since it is possible to have lived in the U.S. for many years yet maintain traditional cultural values (Koneru et al. 2007).

4.1 Strengths and Limitations

This study makes novel contributions to the extant literature on ethnic differences in social support in cancer. First, it examined ethnic differences in multiple types of social support, and tested differences in types of support from different sources. Second, this is the first study to examine ethnic differences in negative support in patients undergoing primary BCa treatment. Third, ethnic groups were well matched on income, education, and medical characteristics, allowing differences attributable to cultural factors to come to light. Finally, women were assessed shortly after BCa surgery, a stressful period when social support is particularly important.

Limitations include self-report measures, which are subject to under- and/or over-reporting. Single-item scales may limit reliability, although reliability and validity of single-item measures of psychological constructs has been demonstrated (Zimmerman et al. 2006). The

negative support subscale did not meet the assumption of homogeneity of variances due to larger variance in the Hispanic group, which may have increased Type I error probability. Generalizability to patients with metastatic BCa or other cancers, non-English speaking Hispanic women, and low-income patients may be limited. Although median income of \$60,000 in this study is more in line with national and population source norms (\$55,832, MMAP 2007), the sample remains higher in mean income than average Americans. Only one participant reported lacking health insurance, further suggesting limited generalizability, though this may change with the evolution of U.S. health insurance law. Applicability of these results to current patients may also be limited given that early-stage BCa treatment, including surgery type prevalence (e.g. lumpectomy versus mastectomy), has changed since data collection. Clinical implications of this study are limited given that association between the SSSS and clinical outcomes was not assessed, but social support has consistently been linked to psychological adjustment (Shapiro et al. 2001) in BCa.

4.2 Implications and Future Directions

Our findings reveal differences in positive and negative support between Hispanic and NHW women after BCa surgery. It is possible that in Hispanic women, receiving positive social support from adult male family members creates opportunity for negative support interactions, which correspond to increased levels of distress. Future studies linking negative support to psychological adjustment are needed. Nevertheless, these results have implications for improving psychological adaptation of women in treatment for early-stage BCa. Targeting barriers to seeking social support from underused sources could help women of both ethnicities to expand their social support networks, decreasing caregiving burden on more typical support sources. Couple coping skills interventions improve support communication between early-stage BCa patients and their partners (Scott, Halford, and Ward 2004), and educational counseling groups for husbands of women diagnosed with early-stage BCa increase support capabilities (Jones et al. 2013). Research should explore feasibility of expanding such interventions for other male supports and of culturally tailoring communication skills interventions (e.g., assertiveness training and anger management) for Hispanic women and male caregivers to mitigate negative support exchanges during the stressful period after surgery for BCa, especially given that family disagreement is linked to poorer mental and physical health outcomes in Hispanic caregivers (Koerner and Shirai, 2012).

Given the cross-sectional nature of this study, longitudinal research is needed to determine trajectories of social support before, during, and after treatment. Future studies should improve measurement of social support by supplementing self-report with objective measures and developing Spanish translations of measures to evaluate whether similar results are found in representative samples of Hispanic women who vary on income levels. Future measures should also assess gender of, frequency of contact with, intensity of relationship with, and proximity to support sources. Finally, this line of work would benefit from comparing social support between Hispanics of different national origins and by examining more nuanced measures of acculturation. Such fine-grained analyses will provide needed insights into the nature of the social support of Hispanic populations, and its

potential to influence adjustment and health outcomes in persons with cancer and other major medical conditions.

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Figure 1.
CONSORT flow diagram.

Figure 0002 **Figure 0003**

Figure 0005

Figure 2.

(a) Ethnic differences in emotional support from different sources.

Note: HP = Husband/Partner; AW = Adult Women; CMAF = Children and Male Adult Family; FR = Friends; CP = Health Care Providers.

* $p < 0.05$

** $p < 0.01$

(b) Ethnic differences in informational support from different sources.

Note: HP = Husband/Partner; AW = Adult Women; CMAF = Children and Male Adult Family; FR = Friends; CP = Health Care Providers.

* $p < 0.05$

** $p < 0.01$

(c) Ethnic differences in instrumental support from different sources.

Note: HP = Husband/Partner; AW = Adult Women; CMAF = Children and Male Adult Family; FR = Friends; CP = Health Care Providers.

* $p < 0.05$

** $p < 0.01$

(d) Ethnic differences in negative support from different sources.

Note: HP = Husband/Partner; AW = Adult Women; CMAF = Children and Male Adult Family; FR = Friends; CP = Health Care Providers.

* $p < 0.05$

** $p < 0.01$

Table 1

Mean, standard deviation, and internal consistency of social support subscales by source and sample items from the Sources of Social Support Scale (husband/partner version).

Support Type/ Source	Mean (SD)		α	Items
	NHW	Hispanic		
Emotional				How much does your husband/partner give you reassurance, encouragement, and emotional support (affection) concerning your breast cancer?
HP	4.40 (0.75)	4.17 (0.89)	0.88	How much does your [husband/partner] listen to and try to understand your worries about your breast cancer?
AW	4.32 (0.78)	4.18 (0.94)	0.87	How much can you relax and be yourself around your [husband/partner]?
CMAF	4.00 (0.95)	4.19 (0.82)	0.90	How much can you open up to your [husband/partner] if you need to talk about your worries about your cancer?
FR	4.42 (0.63)	4.36 (0.55)	0.82	How often does your [husband/partner] let you down when you are counting on [him]?
CP	3.81 (0.86)	3.85 (0.73)	0.85	How often does your [husband/partner] withdraw from discussions about your illness or try to change the topic away from your illness?
Informational				How much does your [husband/partner] give advice or information about your breast cancer (whether you want it or not)?
HP	2.61 (1.30)	2.66 (1.24)	--	
AW*	2.64 (1.30)	3.22 (1.31)	--	
CMAF**	2.00 (1.10)	2.67 (1.35)	--	
FR	2.95 (1.25)	3.24 (1.16)	--	
CP	3.74 (1.22)	3.56 (1.15)	--	
Instrumental				How much does your [husband/partner] give you assistance with things related to your breast cancer (for example, helping you with daily chores, driving you places, dealing with bills and paperwork)?
HP	4.08 (1.00)	3.93 (1.17)	--	
AW*	2.78 (1.47)	3.51 (1.54)	--	
CMAF	2.23 (1.33)	2.91 (1.65)	--	
FR	3.05 (1.44)	2.78 (1.42)	--	
CP	1.34 (0.93)	1.60 (1.22)	--	
Negative				How often does your [husband/partner] argue with you relating to your cancer?
HP**	1.21 (0.43)	1.59 (0.85)	0.74	How often does your [husband/partner] criticize you relating to your cancer?
AW	1.19 (0.47)	1.33 (0.55)	0.65	
CMAF*	1.07 (0.25)	1.21 (0.43)	0.66	
FR	2.00 (0.31)	1.21 (0.57)	0.79	
CP	1.14 (0.42)	1.29 (0.71)	0.75	

Note: SD = Standard deviation; NHW = non-Hispanic White; HP = Husband/Partner; AW = Adult Women; CMAF = Children and Male Adult Family; FR = Friends; CP = Health Care Providers. Internal consistency of informational and instrumental support was not calculated because these scales were composed of 1 item each.

Significance of differences for multivariable group comparisons (not controlling for years in the U.S.) are denoted as follows:

*
 $p < 0.05$

**
 $p < 0.01$

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Table 2

Demographic and medical characteristics of the participants.

Variable	Mean (SD)		
	Hispanic (N = 61)	NHW (N = 150)	Total (N = 211)
Age after surgery ^{**}	46.95 (9.05)	52.27 (8.91)	50.73 (9.25)
Ethnic Identification			
<i>non-Hispanic White</i>	0 (0.0%)	150 (100.0%)	150 (71.1%)
<i>Hispanic/Latino</i>	61 (100.0%)	--	61 (28.9%)
Cuban-American	25 (41.0%)	--	25 (11.8%)
Puerto Rican	4 (6.6%)	--	4 (1.9%)
Hispanic/Other	32 (52.5%)	--	32 (15.2%)
Years in the United States ^{**}			
	32.02 (14.01)	50.33 (11.51)	45.04 (14.81)
Years of Education	15.97 (2.70)	15.48 (2.22)	15.62 (2.37)
Income ^I	78.22 (52.38)	81.58 (51.02)	80.59 (69.53)
Employment			
<i>Employed</i>	46 (75.4%)	105 (70.0%)	151 (71.6%)
<i>Not employed</i>	15 (24.6%)	45 (30.0%)	60 (28.4%)
Marital Status			
<i>Married/Partnered</i>	44 (72.1%)	90 (60.0%)	134 (63.5%)
<i>Separated</i>	2 (3.3%)	3 (2.0%)	5 (2.4%)
<i>Divorced</i>	10 (16.4%)	31 (20.7%)	41 (19.4%)
<i>Widowed</i>	2 (3.3%)	9 (6.0%)	11 (5.2%)
<i>Single</i>	3 (4.9%)	17 (11.3%)	20 (9.5%)
Surgery			
<i>Lumpectomy</i>	30 (49.2%)	82 (54.7%)	112 (53.1%)
<i>Mastectomy</i>	31 (50.8%)	68 (45.3%)	99 (46.9%)
Days since Surgery	44.90 (23.58)	39.26 (23.34)	40.84 (23.49)
Cancer Stage ^{2*}			
<i>Stage 0</i>	13 (21.3%)	18 (12.0%)	31 (14.7%)
<i>Stage I</i>	20 (32.8%)	64 (42.7%)	84 (39.8%)
<i>Stage II</i>	20 (32.8%)	59 (39.3%)	79 (37.4%)
<i>Stage III</i>	8 (13.1%)	7 (4.7%)	15 (7.1%)
<i>Unknown</i>	--	2 (1.3%)	2 (0.9%)

Note: SD = Standard deviation; NHW = non-Hispanic White.

Group differences are denoted as follows:

¹Income in thousands of U.S. dollars.

²TNM staging system.

*
p < 0.05

**
p < 0.01

Table 3

Separate regression analyses predicting aspects of social support from ethnicity in unadjusted univariable analyses (N=211¹).

Support Type	Source	β (SE)	R ²	p
Emotional	HP	−0.123 (0.144)	0.015	0.166
	AW	−0.101 (0.118)	0.010	0.159
	CMAF	0.079 (0.135)	0.007	0.286
	FR	−0.065 (0.090)	0.004	0.356
	CP	0.011 (0.128)	0.000	0.880
Informational	HP	0.016 (0.233)	0.001	0.858
	AW	0.182 (0.200)	0.033	0.010
	CMAF	0.203 (0.186)	0.042	0.007
	FR	0.105 (0.188)	0.011	0.134
	CP	−0.080 (0.185)	0.006	0.257
Instrumental	HP	−0.063 (0.198)	0.004	0.472
	AW	0.189 (0.226)	0.036	0.007
	CMAF	0.174 (0.218)	0.031	0.018
	FR	−0.087 (0.217)	0.008	0.209
	CP	0.110 (0.100)	0.012	0.121
Negative	HP	0.254 (0.089)	0.065	0.003
	AW	0.156 (0.055)	0.025	0.031
	CMAF	0.185 (0.031)	0.035	0.015
	FR	0.107 (0.040)	0.012	0.123
	CP	0.106 (0.046)	0.011	0.131

Note: SE = Standard Error; HP = Husband/Partner; AW = Adult Women; CMAF = Children and Male Adult Family; FR = Friends; CP = Health Care Providers.

¹ 134 married/partnered women were included in HP analyses.

Table 4

Separate regression analyses predicting aspects of social support from ethnicity in multivariable analyses controlling for stage of disease, age, days since surgery, and income (N=211¹).

Support Type	Source	β (SE)					R^2 *		P
		Stage	Age	Days since surgery	Income	Ethnicity	Block 1	Block 2	
Emotional	HP	-0.173 (0.089)	-0.045 (0.008)	-0.085 (0.003)	0.074 (0.001)	-0.101 (0.153)	0.048	0.057	0.281
	AW	0.034 (0.066)	0.026 (0.006)	-0.035 (0.003)	0.115 (0.001)	-0.091 (0.125)	0.020	0.027	0.229
	CMAF	-0.088 (0.074)	0.048 (0.007)	0.050 (0.003)	0.082 (0.001)	0.084 (0.140)	0.022	0.029	0.273
	FR	-0.026 (0.050)	0.094 (0.005)	-0.074 (0.002)	0.096 (0.001)	-0.032 (0.093)	0.026	0.028	0.665
	CP	-0.084 (0.071)	-0.038 (0.007)	0.164 (0.003)	-0.018 (0.001)	-0.020 (0.133)	0.035	0.035	0.783
Informational	HP	-0.067 (0.145)	-0.130 (0.014)	-0.034 (0.005)	0.065 (0.002)	-0.006 (0.249)	0.027	0.028	0.947
	AW	0.124 (0.112)	-0.114 (0.011)	-0.011 (0.004)	-0.008 (0.002)	0.153 (0.209)	0.046	0.068	0.039
	CMAF	-0.007 (0.103)	0.027 (0.010)	-0.009 (0.004)	0.053 (0.002)	0.211 (0.193)	0.007	0.048	0.007
	FR	0.047 (0.105)	0.031 (0.010)	-0.058 (0.004)	0.081 (0.002)	0.119 (0.197)	0.011	0.024	0.105
	CP	0.010 (0.105)	-0.035 (0.010)	-0.002 (0.004)	0.037 (0.002)	-0.089 (0.195)	0.003	0.010	0.229
Instrumental	HP	0.059 (0.126)	0.015 (0.012)	-0.091 (0.004)	0.031 (0.002)	-0.051 (0.213)	0.016	0.019	0.589
	AW	0.155 (0.118)	-0.128 (0.012)	-0.012 (0.005)	0.025 (0.002)	0.156 (0.234)	0.064	0.086	0.032
	CMAF	0.050 (0.124)	-0.065 (0.011)	0.128 (0.005)	0.032 (0.002)	0.140 (0.225)	0.040	0.059	0.065
	FR	0.089 (0.123)	-0.047 (0.012)	0.079 (0.005)	-0.044 (0.002)	-0.110 (0.227)	0.016	0.028	0.131
	CP	0.063 (0.055)	0.040 (0.005)	0.109 (0.002)	-0.111 (0.001)	0.108 (0.104)	0.033	0.044	0.146
Negative	HP	0.139 (0.056)	-0.040 (0.005)	-0.061 (0.002)	0.014 (0.001)	0.237 (0.095)	0.045	0.094	0.010
	AW	0.146 (0.031)	-0.113 (0.003)	0.018 (0.001)	-0.068 (0.000)	0.125 (0.058)	0.054	0.069	0.100
	CMAF	-0.039 (0.018)	-0.043 (0.002)	0.093 (0.001)	0.013 (0.000)	0.161 (0.033)	0.025	0.050	0.046
	FR	0.004 (0.023)	-0.020 (0.002)	-0.080 (0.001)	-0.052 (0.000)	0.114 (0.042)	0.010	0.021	0.120
	CP	0.044 (0.025)	0.002 (0.002)	-0.003 (0.001)	-0.061 (0.000)	0.113 (0.048)	0.007	0.019	0.126

Note: SE = Standard Error; HP = Husband/Partner; AW = Adult Women; CMAF = Children and Male Adult Family; FR = Friends; CP = Health Care Providers.

¹ 134 married/partnered women were included in HP analyses.

* Block 1 = stage of disease, age, days since surgery, and income; Block 2 = ethnicity.

Table 5

Separate regression analyses predicting aspects of social support from ethnicity in multivariable analyses* controlling for stage of disease, age, days since surgery, income, and years in U.S. (N=211¹).

Support Type	Source	β (SE)					R^2 *			P
		Stage	Age	Days since surgery	Income	Years in US	Ethnicity	Block 1	Block 2	
Emotional	HP	-0.191 (0.090)	-0.127 (0.010)	-0.062 (0.003)	0.077 (0.001)	0.194 (0.006)	-0.009 (0.182)	0.074	0.075	0.935
	AW	0.023 (0.066)	-0.075 (0.008)	-0.020 (0.002)	0.119 (0.001)	0.200 (0.006)	-0.007 (0.144)	0.045	0.046	0.933
	CMAF	-0.093 (0.074)	0.004 (0.009)	0.056 (0.003)	0.084 (0.001)	0.088 (0.007)	0.121 (0.159)	0.024	0.034	0.168
	FR	-0.040 (0.050)	-0.040 (0.006)	-0.054 (0.002)	0.102 (0.001)	0.264 (0.004)	0.078 (0.108)	0.054	0.058	0.354
	CP	-0.092 (0.071)	-0.111 (0.008)	0.175 (0.003)	-0.015 (0.001)	0.144 (0.006)	0.040 (0.154)	0.043	0.045	0.640
Informational	HP	-0.076 (0.147)	-0.171 (0.016)	-0.023 (0.005)	0.067 (0.002)	0.097 (0.010)	0.040 (0.296)	0.031	0.032	0.726
	AW	0.109 (0.111)	-0.262 (0.013)	0.011 (0.004)	-0.002 (0.002)	0.292 (0.009)	0.275 (0.236)	0.056	0.106	0.001
	CMAF	-0.015 (0.103)	-0.050 (0.012)	0.003 (0.004)	0.056 (0.002)	0.152 (0.008)	0.274 (0.219)	0.008	0.059	0.002
	FR	0.034 (0.104)	-0.093 (0.012)	-0.040 (0.004)	0.086 (0.002)	0.243 (0.009)	0.221 (0.227)	0.018	0.051	0.009
	CP	0.003 (0.105)	-0.101 (0.012)	0.008 (0.004)	0.040 (0.002)	0.129 (0.009)	-0.035 (0.225)	0.017	0.018	0.682
Instrumental	HP	0.051 (0.127)	-0.023 (0.014)	-0.080 (0.005)	0.033 (0.002)	0.090 (0.009)	-0.009 (0.255)	0.023	0.023	0.941
	AW	0.147 (0.126)	-0.203 (0.015)	-0.001 (0.005)	0.028 (0.002)	0.149 (0.011)	0.218 (0.275)	0.065	0.097	0.010
	CMAF	0.051 (0.124)	-0.052 (0.014)	0.126 (0.005)	0.032 (0.002)	-0.026 (0.011)	0.129 (0.261)	0.049	0.061	0.141
	FR	0.076 (0.122)	-0.169 (0.014)	0.097 (0.005)	-0.039 (0.002)	0.240 (0.010)	-0.010 (0.262)	0.053	0.053	0.908
	CP	0.059 (0.056)	0.003 (0.006)	0.114 (0.002)	-0.110 (0.001)	0.073 (0.005)	0.139 (0.121)	0.033	0.047	0.107
Negative	HP	0.157 (0.056)	0.043 (0.006)	-0.085 (0.002)	0.011 (0.001)	-0.197 (0.004)	0.144 (0.112)	0.099	0.112	0.189
	AW	0.145 (0.031)	-0.118 (0.004)	0.019 (0.001)	-0.068 (0.000)	0.009 (0.003)	0.128 (0.067)	0.058	0.070	0.146
	CMAF	-0.035 (0.018)	0.001 (0.002)	0.087 (0.001)	0.011 (0.000)	-0.087 (0.012)	0.125 (0.036)	0.044	0.055	0.159
	FR	0.015 (0.023)	0.082 (0.003)	-0.095 (0.001)	-0.056 (0.000)	-0.200 (0.002)	0.030 (0.049)	0.038	0.039	0.722
	CP	0.041 (0.026)	-0.022 (0.003)	-0.037 (0.001)	-0.060 (0.000)	0.048 (0.002)	0.133 (0.056)	0.009	0.020	0.123

Note: SE = Standard Error; HP = Husband/Partner; AW = Adult Women; CMAF = Children and Male Adult Family; FR = Friends; CP = Health Care Providers.

¹ 134 married/partnered women were included in HP analyses.

* Block 1 = stage of disease, age, days since surgery, income, and years in U.S.; Block 2 = ethnicity.