# Satisfaction With Cancer Care, Self-Efficacy, and Health-Related Quality of Life in Latino Cancer Survivors

Patricia I. Moreno, PhD [ID][1]; Amelie G. Ramirez, DrPH, MPH[2]; Sandra L. San Miguel-Majors, MS[3]; Rina S. Fox, PhD, MPH[1]; Leopoldo Castillo, MA[1]; Kipling J. Gallion, MS[2]; Edgar Munoz, MS[2]; Ryne Estabrook, PhD[1]; Arely Perez, MS[2]; Thomas Lad, MD[4]; Courtney Hollowell, MD[5]; and Frank J. Penedo, PhD[1]

**BACKGROUND:** The objective of the current study was to examine how modifiable factors such as satisfaction with cancer care and self-efficacy impact health-related quality of life (HRQOL) among Latino cancer survivors. **METHODS:** Latinos previously diagnosed with breast, prostate, or colorectal cancer ($N = 288$) completed questionnaires (Patient Satisfaction with Cancer Care Scale, Stanford Chronic Disease Self-Management Measures, Functional Assessment of Cancer Therapy-General, and Short Acculturation Scale for Hispanics) within 2 years after receiving primary cancer treatment. **RESULTS:** Path model analyses demonstrated that satisfaction with cancer care was associated with greater HRQOL and that this relationship was explained by several facets of self-efficacy (ie, confidence in managing psychological distress [$z = 3.81$; $P<.001$], social support from close others [$z = 2.46$; $P = .014$], social/recreational activities [$z = 3.30$; $P = .001$], and patient-provider communication [$z = -3.72$; $P<.001$]). Importantly, foreign-born, less acculturated, and monolingual Spanish-speaking survivors reported lower self-efficacy in patient-provider communication; however, adjusting for acculturation, language, nativity, and other covariates did not alter these results. **CONCLUSIONS:** Factors that contribute to disparities in HRQOL among Latino cancer survivors compared with non-Latino whites, such as low income, less education, and a lack of health insurance, can be difficult to address. The findings of the current study emphasize the importance of self-efficacy within the context of patient-centered cancer care practices (eg, patient inclusion in care decisions, sufficient time with provider, ready access to medical advice) and suggest that improving satisfaction with care may increase patients' confidence in managing important aspects of their cancer experience and, in turn, improve HRQOL among Latino cancer survivors. *Cancer* 2018;124:1770-9. © 2018 American Cancer Society.

**KEYWORDS:** health-related quality of life, Latino/Hispanic, patient-centered practices, patient-provider communication, satisfaction with care, self-efficacy.

## INTRODUCTION

Latino survivors of breast, prostate, and colorectal cancer experience lower overall health-related quality of life (HRQOL) compared with non-Latino white survivors.[1-6] More specifically, Latina survivors of breast cancer report worse treatment-related symptom bother (eg, fatigue, pain, nausea, and lymphedema) and greater distress and depressed mood than non-Latina white women.[4] Similarly, Latino survivors of prostate cancer report greater sexual and urinary dysfunction as well as worse physical and emotional well-being compared with non-Latino white survivors,[2,3] and Latino survivors of colorectal cancer report greater social distress and worse emotional well-being than non-Latino white survivors.[1,5] Nevertheless, Latinos are highly underrepresented in cancer survivorship research and limited work has addressed these disparities.[7] Furthermore, factors that contribute to health-related disparities in Latino cancer survivors, such as low income, less education, and a lack of health insurance,[8-10] can be difficult to address. Therefore, more research is needed to identify modifiable factors that can be targeted to improve HRQOL, particularly among Latino cancer survivors previously diagnosed with the 3 most common cancer types among Latinos: breast, prostate, and colorectal cancer.[11]

Greater satisfaction with cancer care predicts better HRQOL in Latino cancer survivors.[12] However, Latino cancer survivors report lower overall satisfaction with cancer care and more difficulty accessing and coordinating cancer care.[1,13] Spanish-speaking Latino cancer survivors in particular report lower satisfaction with cancer care[14] and lower confidence and trust in their medical providers.[1] Given these observed disparities in satisfaction with cancer care and evidence that cancer care satisfaction predicts HRQOL among Latino cancer survivors, we aimed to identify factors that may explain the relationship between satisfaction with cancer care and HRQOL and provide possible targets for future intervention efforts. To this end, we selected a measure of satisfaction with cancer care (Patient Satisfaction with Cancer Care

Scale[15,16]) that assesses modifiable patient-centered cancer care practices (eg, patient inclusion in care decisions, sufficient time with provider, ready access to medical advice, timely appointments, and courteous/respectful staff).

Greater self-efficacy, or perceived confidence in managing care and different life domains, may be a pathway by which satisfaction with cancer care influences HRQOL in Latino cancer survivors. Greater satisfaction with cancer care (including patient inclusion in care decisions, sufficient time and information for treatment decision making, and clear medical advice and recommendations) is associated with both greater self-efficacy in patient-provider communication among Latino cancer survivors[12] and greater self-efficacy in managing health care among Latino medical patients.[17] Furthermore, self-efficacy is a demonstrated mechanism by which psychosocial interventions improve well-being in cancer survivors[18] and an important determinant of psychological adjustment in the context of coping with chronic stress.[18-21] However, foreign-born, less acculturated, and primarily Spanish-speaking Latino patients report lower self-efficacy managing both their health and medical care.[17] In the current study, we examined whether facets of self-efficacy (ie, confidence in managing patient-provider communication, psychological distress, physical symptoms, social support from close others, social/recreational activities, and chores) were associated with greater HRQOL in Latino cancer survivors, and explained the relationship between satisfaction with cancer care and greater HRQOL.

To our knowledge, this is the first study to examine whether multiple facets of self-efficacy explain the relationship between satisfaction with cancer care and HRQOL in a diverse, underrepresented sample of Latino survivors of breast, prostate, and colorectal cancer. Consistent with previous research, it was hypothesized that satisfaction with cancer care would be associated with greater HRQOL. Furthermore, it was hypothesized that the relationship between satisfaction with cancer care and greater HRQOL would be explained by the relationship between satisfaction with cancer care and greater self-efficacy (ie, perceived confidence in managing patient-provider communication, psychological distress, physical symptoms, social support from close others, chores, and social/recreational activities). In light of previous research documenting the relationship between acculturation, language use, and nativity with both self-efficacy[12,17] and satisfaction with care[1,14] in Latino patients, we also examined the relationship between these variables and satisfaction with cancer care, facets of self-efficacy, and HRQOL.

## MATERIALS AND METHODS

### Participants
The current sample of 288 patients was derived from baseline data of a National Cancer Institute-funded project that aimed to reduce symptom burden and improve adherence to treatment recommendations in Latino cancer survivors. Eligibility criteria included a diagnosis of breast, colorectal, or prostate cancer; completion of primary cancer treatment within the past 15 months; self-identification as Hispanic/Latino; and verbal fluency in Spanish or English. Potential participants with evidence of metastatic disease, current severe mental illness (eg, psychosis), active suicidal ideation, and/or substance dependence within the past year were excluded.

### Procedures
Potential participants were identified via medical chart review and recruited from major tertiary medical centers in Chicago and San Antonio. At the time of recruitment, participants provided informed consent and completed a comprehensive psychosocial baseline in-person assessment (duration of approximately 90 minutes) with trained bilingual interviewers. Participants had the option of completing the baseline assessment in English or Spanish based on their language preferences and were compensated $25 for participation, as well as parking and other transportation reimbursements. All measures have been translated and validated in both English-speaking and Spanish-speaking samples with good to excellent psychometric properties. All procedures were approved by the institutional review board of each institution and were compliant with the Health Insurance Portability and Accountability Act (HIPPA). Data were collected between February 2012 and January 2015.

### Measures
#### Sociodemographic and cancer-related characteristics
A sociodemographics questionnaire was administered to assess age, marital status, parental status, race, ethnicity, nativity, immigration generation, language use, years living in the United States, formal education, and combined household income. Electronic health records were reviewed to capture diagnosis, stage of disease (TNM staging system), treatment type, months since diagnosis, and months since treatment completion.

#### Satisfaction with cancer care
The 18-item Patient Satisfaction with Cancer Care Scale[15,16] assessed satisfaction with cancer care on a

Likert-type scale from 1 (strongly disagree) to 4 (strongly agree). Sample items include: "I felt included in decisions about my health," "I had enough time with my doctor," "I was treated with courtesy and respect," "My doctors seemed to communicate well about my care," "Making an appointment was easy," and "I knew who to contact when I had a question." This scale demonstrated excellent internal consistency in this sample (overall $\alpha = .94$, English version $\alpha = .94$, Spanish version $\alpha = .95$).

### Self-efficacy

The 24-item self-efficacy scale of the Stanford Chronic Disease Self-Management Measures[22,23] assessed perceived confidence in managing patient-provider communication, psychological distress, physical symptoms, social support from close others, social/recreational activities, and chores on a Likert-type scale from 1 (not at all confident) to 5 (totally confident). Sample items include: "How confident are you that you can discuss openly with your doctor any personal problems that may be related to your illness?" (patient-provider communication), "How confident are you that you can do something to make yourself feel better when you feel sad or down in the dumps?" (psychological distress), "How confident are you that you can reduce your physical discomfort or pain?" (physical symptoms), "How confident are you that you can get emotional support from friends and family?" (social support), "How confident are you that you can continue to do your hobbies and recreation?" (social/recreational activities), and "How confident are you that you can get your errands done despite your health problems?" (chores). These scales demonstrated good to excellent internal consistency in this sample (overall $\alpha = .78 - .95$, English version $\alpha = .78 - .95$, Spanish version $\alpha = .78 - .95$).

### Health-related quality of life

The 27-item Functional Assessment of Cancer Therapy-General (FACT-G) scale[24,25] assessed HRQOL, including facets of physical, functional, social, and emotional well-being on a Likert-type scale from 0 (not at all) to 4 (very much). Sample items include: "I am bothered by side effects of treatment" (physical, reverse-coded), "I am able to work" (functional), "I am satisfied with family communication about my illness" (social), and "I worry about dying" (emotional, reverse-coded). This scale demonstrated excellent internal consistency in this sample (overall $\alpha = .91$, English version $\alpha = .92$, Spanish version $\alpha = .90$).

### Acculturation

The 12-item Short Acculturation Scale for Hispanics[26] assessed US acculturation, including English language use, English language media, and social relations with non-Latino US Americans on Likert-type scales. Sample language items include (on a scale of 1 [indicating only Spanish] to 5 [indicating only English]): "In general, what language(s) do you read and speak?" (English language use) and "In what language(s) are the TV programs you usually watch?" (English language media). Sample social relations items include (1 [indicates all Latinos/Hispanics] to 5 [indicates all US Americans]): "Your close friends are ____" and "The persons you visit or who visit you are ____" This scale demonstrated excellent internal consistency in this sample (overall $\alpha = .93$, English version $\alpha = .83$, Spanish version $\alpha = .85$).

### Statistical Analyses

Relations between measures of interest and acculturation, sociodemographic characteristics (ie, age, sex, primary language, nativity, income, educational history, and marital status), and cancer-related variables (ie, cancer stage, cancer type, months since diagnosis, and months since treatment completion) were assessed using zero-order bivariate correlations, independent $t$ tests, and 1-way analyses of variance (ANOVAs).

### Path model analyses

Path model analyses were conducted to simultaneously examine the direct and indirect effects of satisfaction with cancer care and multiple facets of self-efficacy on HRQOL. These analyses also allowed us to examine which self-efficacy subscales emerged as significant predictors of HRQOL when the effects of all 6 self-efficacy subscales were modeled simultaneously. Path model analyses were estimated using maximum likelihood with missing values (MLMV) in STATA statistical software (version 14.0; StataCorp LLC, College Station, Texas). This estimation method allows data from all participants to be included in path model analyses (ie, each participant's available data are included in the model to estimate all other parameters). Models included paths from satisfaction with cancer care to facets of self-efficacy as well as paths from each facet of self-efficacy to HRQOL. Given that facets of self-efficacy are positively correlated (ie, covary), the self-efficacy subscales were allowed to covary within path models to account for their significant correlations. The ability to covary variables that are significantly correlated and account for their shared variance is a unique strength of path model analysis.[27,28] A direct path

from satisfaction with cancer care to HRQOL also was included to examine whether facets of self-efficacy accounted for the direct effect between satisfaction with cancer care and HRQOL. Indirect effects of satisfaction with cancer care on HRQOL through each facet of self-efficacy were calculated. Facets of self-efficacy that did not demonstrate a significant direct effect on HRQOL were pruned from the model. Analyses controlling for covariates (ie, relationships between measures of interest with acculturation, relevant sociodemographic/cancer characteristics) also were conducted. To examine an alternative model, we also conducted path model analyses in which the predictor and mediators were reversed (ie, satisfaction with cancer care was modeled as the mediator of the effects of facets of self-efficacy on HRQOL). Model fit was evaluated according to criteria proposed by Hu and Bentler.[29] The Tucker-Lewis Index (TLI) and Comparative Fit Index (CFI) are scaled as goodness-of-fit indices that range from 0 to 1, with higher values indicating better model fit. In accordance with the criteria of Hu and Bentler, a value ≥0.95 was used as a cutoff score to indicate good model fit. The root mean square error of approximation (RMSEA) is scaled as a badness-of-fit index that ranges from 0 to 1, with lower values indicating better model fit. In accordance with the criteria of Hu and Bentler, a RMSEA value ≤0.06 was used as a cutoff score to indicate good model fit.

## RESULTS
Table 1 displays the sociodemographic characteristics of the sample. Participants were on average 56 years old ($M = 56.05$, $SD = 10.20$), married or cohabitating (61.5%), and had children (87.8%). Most participants reported a high school education or less (65.6%) and a combined household income less than $50,000 (68.4%) with approximately half of the sample reporting a combined household income less than $25,000 (48.9%). Participants represented a variety of countries/regions of origin, including Mexico (80.6%), South America (6.2%), and Puerto Rico (5.2%). The majority of participants were foreign born (59.4%) and either were monolingual Spanish-speaking (54.2%) or English-Spanish bilingual (26.0%). Table 2 displays the medical characteristics. Participants on average were diagnosed 17 months previously ($M = 17.14$, $SD = 19.33$) with breast (44.4%), colorectal (24.3%), and prostate (31.3%) cancer. The majority of participants were diagnosed with stage 0 (2.1%), stage I (20.1%), and stage II (35.4%) cancers and one-quarter of participants were diagnosed with stage III disease (25.0%). Few participants received

neoadjuvant chemotherapy (16.0%), although approximately one-third received adjuvant chemotherapy (31.3%). Approximately one-half of the participants received radiotherapy (56.6%) and hormone therapy (46.9%). As demonstrated in Tables 1 and 2, there were significant differences by cancer type in some sociodemographic and cancer covariates (ie, age, years living in the United States, sex, months since cancer diagnosis and treatment completion, cancer stage, and treatment type).

Table 3 shows descriptive statistics for primary variables. Compared with norms derived from primarily non-Hispanic/Latino white survivors, the current sample of Latino cancer survivors reported lower overall HRQOL (FACT-G).[25] Across the subscales of self-efficacy, participants on average endorsed feeling "somewhat confident" to "quite a bit confident" in their ability to manage patient-provider communication, psychological distress, physical symptoms, support from close others, social/recreational activities, and chores (with a standard deviation of approximately 1 point on a 5-point Likert-type scale). The 6 facets of self-efficacy were found to be positively correlated (Pearson correlation coefficient [$r$], 0.48-0.81; $P$ values <.001). Survivors of breast cancer reported worse HRQOL ($F(2,275) = 5.31$; $P = .005$) and lower confidence managing chores ($F(2,271) = 4.64$; $P = .010$) compared with survivors of prostate cancer (no difference between survivors of colorectal cancer and either group). Furthermore, survivors of breast cancer reported lower confidence managing psychological distress ($F(2,273) = 4.68$; $P = .010$) and physical symptoms ($F(2,271) = 6.12$; $P = .003$) compared with both survivors of prostate and colorectal cancer (no difference between survivors of colorectal and prostate cancer). Similarly, women reported lower HRQOL ($t(276) = -2.31$; $P = .022$) and confidence in managing psychological distress ($t(274) = -2.73$; $P = .007$), physical symptoms ($t(272) = -2.92$; $P = .004$), and chores ($t(272) = -3.15$; $P = .002$) than men.

### Sociodemographic and cancer covariates
Acculturation, language use, and nativity were found to be uniquely associated with self-efficacy in patient-provider communication. Acculturation to the United States was positively correlated with self-efficacy in patient-provider communication ($r = 0.13$; $P = .030$) and foreign-born participants reported lower self-efficacy in patient-provider communication than US-born participants ($t(274) = -2.90$; $P = .004$). Bilingual English-Spanish speakers also reported greater self-efficacy in patient-provider communication than monolingual Spanish speakers ($F(2,273) = 4.41$; $P = .013$; English

**TABLE 1.** Sociodemographic Characteristics

| | Combined | | Breast Cancer | | Prostate Cancer | | Colorectal Cancer | | |
|---|---|---|---|---|---|---|---|---|---|
| | N = 288 | | N = 128 | | N = 90 | | N = 70 | | |
| Mean age (SD), y | 56.05 | (10.20) | 51.44 | (9.13) | 63.07 | (8.23) | 55.03 | (9.30) | $F(2, 279) = 44.83; P < .001; \eta^2 = .25$ |
| Mean y living in United States (SD) | 28.65 | (14.48) | 24.64 | (14.21) | 32.89 | (14.52) | 29.68 | (12.97) | $F(2, 175) = 6.13; P = .003; \eta^2 = .07$ |
| Sex, % (no.) | | | | | | | | | $\chi^2 (2) = 221.27;$ |
| | | | | | | | | | $P < 001;$ Cramer's $V = .88$ |
| Female | 53.8 | (155) | 100 | (128) | 0 | (0) | 38.6 | (27) | |
| Male | 46.2 | (133) | 0 | (0) | 100 | (90) | 61.4 | (43) | |
| Race, % (no.) | | | | | | | | | $\chi^2 (8) = 9.45;$ |
| | | | | | | | | | $P = $ NS; Cramer's $V = .13$ |
| White | 88.2 | (254) | 86.7 | (111) | 86.7 | (78) | 92.9 | (65) | |
| Black | 0.3 | (1) | 0 | (0) | 1.1 | (1) | 0 | (0) | |
| Native American | 0.3 | (1) | 0 | (0) | 1.1 | (1) | 0 | (0) | |
| Other | 8.7 | (25) | 10.2 | (13) | 9.0 | (9) | 4.3 | (3) | |
| Unknown | 2.1 | (6) | 3.1 | (4) | 0 | (0) | 2.8 | (2) | |
| Missing | 0.3 | (1) | 0 | (0) | 1.1 | (1) | 0 | (0) | |
| Ethnicity, % (no.) | | | | | | | | | |
| Hispanic/Latino | 100 | (288) | 100 | (128) | 100 | (90) | 100 | (70) | |
| Country/territory of origin, % (no.) | | | | | | | | | $\chi^2 (24) = 21.88;$ |
| | | | | | | | | | $P = $ NS; Cramer's $V = .20$ |
| Mexico | 80.6 | (232) | 78.1 | (100) | 84.4 | (76) | 80.0 | (56) | |
| Puerto Rico | 5.2 | (15) | 4.7 | (6) | 6.7 | (6) | 4.3 | (3) | |
| Central America | 1.7 | (5) | 3.1 | (4) | 1.1 | (1) | 0 | (0) | |
| South America | 6.2 | (18) | 6.3 | (8) | 6.7 | (6) | 5.7 | (4) | |
| Caribbean | 1.0 | (3) | 1.5 | (2) | 0 | (0) | 1.4 | (1) | |
| Other | 1.0 | (3) | 1.5 | (2) | 1.1 | (1) | 0 | (0) | |
| Unknown | 0.7 | (2) | 0 | (0) | 0 | (0) | 2.9 | (2) | |
| Missing | 3.5 | (10) | 4.7 | (6) | 0 | (0) | 5.7 | (4) | |
| Language, % (no.) | | | | | | | | | $\chi^2 (4) = 8.14;$ |
| | | | | | | | | | $P = $ NS; Cramer's $V = .12$ |
| English monolingual | 17.0 | (49) | 15.6 | (20) | 15.6 | (14) | 21.4 | (15) | |
| Spanish monolingual | 54.2 | (156) | 49.2 | (63) | 66.7 | (60) | 47.1 | (33) | |
| English-Spanish bilingual | 26.0 | (75) | 30.5 | (39) | 17.8 | (16) | 28.6 | (20) | |
| Missing | 2.8 | (8) | 4.7 | (6) | 0 | (0) | 2.9 | (2) | |
| Nativity, % (no.) | | | | | | | | | $\chi^2 (2) = 3.08;$ |
| | | | | | | | | | $P = $ NS; Cramer's $V = .11$ |
| US born | 37.8 | (109) | 36.7 | (47) | 33.3 | (30) | 45.7 | (32) | |
| Foreign born | 59.4 | (171) | 58.6 | (75) | 66.7 | (60) | 51.4 | (36) | |
| Missing | 2.8 | (8) | 4.7 | (6) | 0 | (0) | 2.9 | (2) | |
| Immigrant generation, % (no.) | | | | | | | | | $\chi^2 (14) = 14.94;$ |
| | | | | | | | | | $P = $ NS; Cramer's $V = .16$ |
| First | 56.6 | (163) | 52.3 | (67) | 67.8 | (61) | 50.0 | (35) | |
| Second | 12.8 | (37) | 12.5 | (16) | 12.2 | (11) | 14.2 | (10) | |
| Third | 10.8 | (31) | 14.0 | (18) | 5.5 | (5) | 11.4 | (8) | |
| Fourth | 6.6 | (19) | 4.6 | (6) | 7.7 | (7) | 8.5 | (6) | |
| Fifth | 6.9 | (20) | 7.8 | (10) | 5.5 | (5) | 7.1 | (5) | |
| Not applicable | 2.1 | (6) | 2.3 | (3) | 0 | (0) | 4.2 | (3) | |
| Unknown | 0.7 | (2) | 0.8 | (1) | 0 | (0) | 1.4 | (1) | |
| Missing | 3.4 | (10) | 5.4 | (7) | 1.1 | (1) | 2.9 | (2) | |
| Household income, % (no.) | | | | | | | | | $\chi^2 (20) = 23.11;$ |
| | | | | | | | | | $P = $ NS; Cramer's $V = .20$ |
| <$11,9999 | 22.2 | (64) | 21.8 | (28) | 18.8 | (17) | 27.1 | (19) | |
| $12,000-$24,999 | 26.7 | (77) | 26.5 | (34) | 30.0 | (27) | 22.8 | (16) | |
| $25,000-$49,999 | 19.5 | (56) | 20.3 | (26) | 18.8 | (17) | 18.5 | (13) | |
| $50,000-$99,999 | 9.8 | (28) | 6.2 | (8) | 13.3 | (12) | 11.4 | (8) | |
| >$100,000 | 5.6 | (16) | 7.8 | (10) | 4.4 | (4) | 2.9 | (2) | |
| Unknown | 12.5 | (36) | 10.1 | (13) | 14.4 | (13) | 14.2 | (10) | |
| Missing | 3.8 | (11) | 7.0 | (9) | 0 | (0) | 2.9 | (2) | |
| Educational history, % (no.) | | | | | | | | | $\chi^2 (18) = 18.19;$ |
| | | | | | | | | | $P = $ NS; Cramer's $V = .18$ |
| <High school | 39.2 | (113) | 30.4 | (39) | 44.4 | (40) | 48.5 | (34) | |
| High school or equivalency (GED) | 26.4 | (76) | 25.7 | (33) | 25.5 | (23) | 28.5 | (20) | |
| Associate's degree | 6.2 | (18) | 7.0 | (9) | 4.4 | (4) | 7.1 | (5) | |
| Bachelor's degree | 8.0 | (23) | 8.6 | (11) | 11.1 | (10) | 2.9 | (2) | |
| Master's degree | 2.1 | (6) | 3.1 | (4) | 2.2 | (2) | 0 | (0) | |

**TABLE 1.** *Continued*

| | Combined | | Breast Cancer | | Prostate Cancer | | Colorectal Cancer | | |
|---|---|---|---|---|---|---|---|---|---|
| | N = 288 | | N = 128 | | N = 90 | | N = 70 | | |
| Doctoral degree (PhD, DPhil) | 1.0 | (3) | 0.8 | (1) | 1.1 | (1) | 1.4 | (1) | |
| Professional degree (MD, JD, DDS) | 0.7 | (2) | 0.8 | (1) | 0 | (0) | 1.4 | (1) | |
| Other | 3.1 | (9) | 4.6 | (6) | 2.2 | (2) | 1.4 | (1) | |
| Missing | 13.2 | (38) | 18.7 | (24) | 8.8 | (8) | 8.5 | (6) | |
| Relationship status, % (no.) | | | | | | | | | $\chi^2$ (10) = 16.08; P = NS; Cramer's V = .17 |
| Single | 11.5 | (33) | 10.9 | (14) | 8.8 | (8) | 15.7 | (11) | |
| Married or living with partner | 61.5 | (177) | 56.2 | (72) | 76.6 | (69) | 51.4 | (36) | |
| Dating | 0.3 | (1) | 0 | (0) | 0 | (0) | 1.4 | (1) | |
| Separated | 5.6 | (16) | 7.8 | (10) | 3.3 | (3) | 4.2 | (3) | |
| Divorced | 13.5 | (39) | 14.8 | (19) | 7.7 | (7) | 18.5 | (13) | |
| Widowed | 4.9 | (14) | 5.4 | (7) | 3.3 | (3) | 5.7 | (4) | |
| Missing | 2.8 | (8) | 4.6 | (6) | 0 | (0) | 2.9 | (2) | |
| Parental status, % (no.) | | | | | | | | | $\chi^2$ (2) = 1.42; P = NS; Cramer's V = .07 |
| Yes | 87.8 | (253) | 8.6 | (11) | 7.7 | (7) | 12.8 | (9) | |
| No | 9.4 | (27) | 86.7 | (111) | 92.2 | (83) | 84.2 | (59) | |
| Missing | 2.8 | (8) | 4.6 | (6) | 0 | (0) | 2.9 | (2) | |

Abbreviations: GED, General Equivalency Diploma; $\eta^2$, eta-squared; $\chi^2$, chi-squared; NS, not significant; SD, standard deviation; y, years.

**TABLE 2.** Medical and Cancer Characteristics

| Characteristics | Combined | | Breast Cancer | | Prostate Cancer | | Colorectal Cancer | | |
|---|---|---|---|---|---|---|---|---|---|
| | N = 288 | | N = 128 | | N = 90 | | N = 70 | | |
| Mean mo since diagnosis (SD) | 11.98 | (5.53) | 11.16 | (5.04) | 11.78 | (5.45) | 13.76 | (6.17) | $F(2, 245) = 4.81$; P = .009; $\eta^2$ = .04 |
| Mean mo since treatment (SD) | 5.00 | (4.38) | 3.92 | (3.68) | 5.17 | (4.57) | 6.64 | (4.78) | $F(2, 234) = 8.05$; P < .001; $\eta^2$ = .06 |
| Cancer type, % (no.) | | | | | | | | | |
| Prostate | 31.3 | (90) | 0 | (0) | 100 | (90) | 0 | (0) | |
| Breast | 44.4 | (128) | 100 | (128) | 0 | (0) | 0 | (0) | |
| Colorectal | 24.3 | (70) | 0 | (0) | 0 | (0) | 100 | (70) | |
| Cancer stage, % (n) | | | | | | | | | $\chi^2$ (8) = 53.61; P < .001; Cramer's V = .34 |
| 0 | 2.1 | (6) | 4.7 | (6) | 0 | (0) | 0 | (0) | |
| I | 20.1 | (58) | 33.5 | (43) | 10.0 | (9) | 8.5 | (6) | |
| II | 35.4 | (102) | 35.1 | (45) | 42.2 | (38) | 27.1 | (19) | |
| III | 25.0 | (72) | 14.0 | (18) | 22.2 | (20) | 48.5 | (34) | |
| Missing | 17.3 | (50) | 12.5 | (16) | 25.5 | (23) | 15.7 | (11) | |
| Treatment type, % (no.) | | | | | | | | | |
| Neoadjuvant chemotherapy | 16.0 | (46) | 16.4 | (21) | 0 | (0) | 35.7 | (25) | $\chi^2$ (4) = 43.94; P < .001; Cramer's V = .29 |
| Adjuvant chemotherapy | 31.3 | (90) | 39.8 | (51) | 1.1 | (1) | 54.3 | (38) | $\chi^2$ (4) = 74.93; P < .001, Cramer's V = .38 |
| Radiotherapy | 56.6 | (163) | 63.3 | (81) | 62.2 | (56) | 37.1 | (26) | $\chi^2$ (4) = 19.59; P = .001; Cramer's V = .19 |
| Hormone therapy | 46.9 | (135) | 75.8 | (97) | 29.7 | (38) | 0 | (0) | $\chi^2$ (4) = 122.77; P < .001; Cramer's V = .47 |
| Immunotherapy | 7.6 | (22) | 16.4 | (21) | 1.1 | (1) | 0 | (0) | $\chi^2$ (4) = 52.80; P < .001; Cramer's V = .31 |
| Study site, % (no.) | | | | | | | | | |
| San Antonio | 59.4 | (171) | 57.8 | (74) | 55.6 | (50) | 67.1 | (47) | $\chi^2$ (2) = 2.43; P = NS; Cramer's V = .09 |
| Chicago | 40.6 | (117) | 42.2 | (54) | 44.4 | (40) | 32.9 | (23) | |

Abbreviations: $\eta^2$; eta-squared; mo, months; $\chi^2$, chi-squared; NS, not significant; SD, standard deviation.
Patients with stage IV disease were not eligible. TNM staging system was used to classify cancer stage.

monolingual speakers did not differ). Age was positively correlated with HRQOL ($r = 0.13$; $P = .028$) and confidence managing patient-provider communication ($r = 0.13$; $P = .036$), psychological distress ($r = 0.14$; $P = .024$), and physical symptoms ($r = 0.15$; $P = .011$). Combined household income also was found to be positively correlated with HRQOL (Spearman's rank correlation coefficient [$r_s$] = 0.16; $P = .007$) and confidence managing psychological distress ($r_s = 0.14$; $P = .023$) and chores ($r_s = 0.12$; $P = .043$). Married participants reported greater HRQOL ($t(276) = 3.09$; $P = .002$) and confidence managing social support from close others ($t(273) = 2.53$; $P = .012$) compared with those who were not married. More advanced cancer stage was positively correlated with confidence managing patient-provider communication ($r_s = 0.17$; $P = .012$), psychological

**TABLE 3.** Descriptive Statistics for Primary Variables

| Measure | Mean | (SD) |
|---|---|---|
| Satisfaction with Cancer Care | | |
|   Patient Satisfaction with Cancer Care Scale | 80.64 | (9.25) |
| Health-Related Quality of Life | | |
|   FACT–General | 80.36 | (16.27) |
| Facets of Self-Efficacy | | |
|   Stanford Chronic Disease Self-Management Measures | | |
|     Patient-provider communication | 4.29 | (0.88) |
|     Psychological distress | 3.82 | (0.93) |
|     Physical symptoms | 3.77 | (0.97) |
|     Social support from close others | 3.85 | (0.96) |
|     Chores | 3.92 | (1.05) |
|     Social/recreational activities | 3.83 | (1.14) |

Abbreviations: FACT, Functional Assessment of Cancer Therapy; SD, standard deviation.

distress ($r_s = 0.15$; $P = .022$), physical symptoms ($r_s = 0.17$; $P = .011$), and chores ($r_s = 0.18$; $P = .006$) (we note the importance of interpreting associations between sociodemographic/cancer covariates and primary variables of interest with caution given that these correlations are significant, but modest in magnitude). All other associations between acculturation and sociodemographic/cancer characteristics, including both time since diagnosis and treatment completion, and primary measures (ie, satisfaction with cancer care, facets of self-efficacy, and HRQOL) were nonsignificant.

### Path model analyses

Path analyses simultaneously examining the direct and indirect effects of satisfaction with cancer care and facets of self-efficacy on HRQOL demonstrated that 2 facets of self-efficacy, confidence managing physical symptoms ($z = 0.63$; $P = .529$) and chores ($z = 1.05$; $P = .296$), were not significantly associated with HRQOL. The modified path analysis pruning these 2 facets of self-efficacy (Fig. 1) demonstrated excellent overall fit (CFI = 1.00; TLI = 1.00; $RMSEA < .001$) and explained a proportion of variance in HRQOL ($R^2 = 0.46$). Satisfaction with cancer care was found to be significantly associated with greater confidence in managing patient-provider communication ($z = 7.81$; $P<.001$), psychological distress ($z = 5.06$; $P<.001$), social support from close others ($z = 5.70$; $P<.001$), and social/recreational activities ($z = 4.09$; $P<.001$), which in turn were significantly associated with greater HRQOL (confidence in managing psychological distress [$z = 5.80$; $P<.001$], social support from close others [$z = 2.73$; $P = .006$], social/recreational
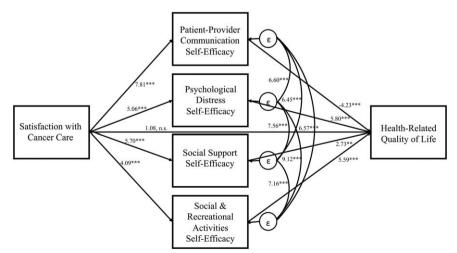
**Figure 1.** Path model (288 patients) of the direct and indirect effects of satisfaction with cancer care, facets of self-efficacy, and health-related quality of life. Standardized path coefficients are shown. n.s. indicates not significant. *$P < .05$; **$P < .01$; ***$P < .001$.

activities [$z = 5.59$; $P<.001$], and patient-provider communication [$z = -4.23$; $P<.001$]) (the total effect of patient-provider communication on HRQOL was positive, as expected; however, there was a suppression effect when simultaneously modeling the 4 facets of self-efficacy). All 4 facets of self-efficacy were significantly positively associated with one another ($z$ values of 6.45-9.12; $P<.001$). Indirect effect analyses demonstrated significant indirect effects of satisfaction with cancer care on HRQOL through its association with these 4 facets of self-efficacy: confidence in managing psychological distress ($z = 3.81$; $P<.001$); social support from close others ($z = 2.46$; $P = .014$); social/recreational activities ($z = 3.30$; $P = .001$); and patient-provider communication ($z = -3.72$; $P<.001$), which accounted for its direct association with HRQOL and rendered this effect nonsignificant ($z = 1.08$; $P = .282$). Importantly, this pattern of results was not altered in path analyses controlling for relationships between covariates (ie, acculturation, language use, nativity, cancer type and stage, age, sex, income, and marital status) and satisfaction with cancer care, facets of self-efficacy, and HRQOL. Results from the alternative model, in which satisfaction with cancer care was modeled as the mediator of the effects of facets of self-efficacy on HRQOL, demonstrated that satisfaction with cancer care did not explain the relationship between facets of self-efficacy and HRQOL (ie, facets of self-efficacy continued to demonstrate significant direct effects on HRQOL [$P<.001-.006$] whereas the direct effect of satisfaction with cancer care on HRQOL was nonsignificant [$P = .282$]).

## DISCUSSION

Despite evidence that Latinos experience significantly greater decrements in HRQOL compared with non-Latino white individuals after the diagnosis and treatment of cancer,[6] including the 3 most common cancers among Latinos (breast,[4] prostate,[2,3] and colorectal[1,5]), Latinos are underrepresented in cancer survivorship research.[7] Furthermore, factors that contribute to health-related disparities in Latino cancer survivors, such as low income, less education, and a lack of health insurance,[8-10] can be difficult to address. Therefore, the objective of the current study was to examine how modifiable factors such as satisfaction with cancer care and self-efficacy impact HRQOL in Latino survivors of breast, prostate, and colorectal cancer. More specifically, we examined whether facets of self-efficacy (confidence in managing patient-provider communication, psychological distress, physical symptoms, social support from close others, social/recreational

activities, and chores) explained the relationship between satisfaction with cancer care and greater HRQOL. Furthermore, our unique sample of primarily immigrant, Spanish-speaking, socioeconomically-disadvantaged Latino cancer survivors also allowed us to examine the influence of language use, acculturation, and nativity on these factors.

The results of the current study demonstrated that both satisfaction with cancer care and facets of self-efficacy were associated with greater HRQOL in Latino cancer survivors. Furthermore, path model analyses demonstrated that 4 facets of self-efficacy (ie, patients' perceived confidence in managing patient-provider communication, psychological distress, social support, and social/recreational activities) explained the relationship between satisfaction with cancer care and greater HRQOL. Importantly, the satisfaction with cancer care measure used in this study (Patient Satisfaction with Cancer Care Scale[15,16]) assessed modifiable patient-centered cancer care practices (eg, patient inclusion in care decisions, sufficient time with provider, ready access to medical advice, timely appointments, and courteous/respectful staff) that can be targeted to improve patient satisfaction. Thus, these findings underscore the importance of implementing patient-centered cancer care practices and suggest that improving satisfaction with cancer care may increase patients' confidence in managing important aspects of their cancer experience and, in turn, improve HRQOL and well-being among Latino cancer survivors. Interventions that include coping skills training[19,21] or facilitate communication and social support[30] also may be effective in improving self-efficacy among Latino cancer survivors as self-efficacy has been shown to mediate the effects of these interventions on improved QOL in patients with chronic illness, including cancer.[18] More research is needed to determine the viability of improving HRQOL by targeting satisfaction with cancer care and self-efficacy in Latino cancer survivors.

Previous research has demonstrated that foreign-born, less acculturated, and Spanish-speaking Latino cancer survivors demonstrate lower satisfaction with cancer care[1,14] and self-efficacy in managing patient-provider communication.[12,17] We similarly found that foreign-born, less acculturated, and monolingual Spanish-speaking survivors reported lower self-efficacy in patient-provider communication. Furthermore, higher income also was associated with greater HRQOL and self-efficacy, including confidence managing psychological distress and chores. It is interesting to note that across the subscales of self-efficacy, participants on average endorsed

feeling "somewhat confident" to "quite a bit confident" in their ability to manage patient-provider communication, psychological distress, physical symptoms, support from close others, social/recreational activities, and chores. Despite a somewhat high average endorsement, there was variance in responses, underlining the importance of identifying factors that are associated with lower self-efficacy. These findings highlight the importance of considering acculturation, language use, nativity, and income when working with Latino survivors in cancer care settings because these factors may identify survivors who are more likely to experience decrements in HRQOL and self-efficacy and need additional support. Nevertheless, the results of the current study should be interpreted within the context of the higher overall endorsement of self-efficacy in this sample because this may have biased results. Future studies should examine the effects of satisfaction with cancer care and self-efficacy in Latino cancer survivor samples with lower overall endorsements of self-efficacy to assess whether the associations observed in the current study hold across a range of responses, including very low levels of self-efficacy.

Survivors of breast cancer reported worse HRQOL and lower self-efficacy, including lower confidence in managing psychological distress, physical symptoms, and chores, compared with survivors of prostate and colorectal cancer. Given that sex was highly collinear with cancer type in this sample, it is not surprising that analyses examining sex differences replicated this pattern of results and demonstrated that Latina women experienced lower HRQOL and self-efficacy compared with Latino men. Importantly, these findings suggest that Latina survivors of breast cancer not only experience greater decrements in HRQOL when compared with non-Latino white women,[4] but also when compared with Latino survivors diagnosed with the 2 other most common cancers in this population: prostate and colorectal. Therefore, the viability of improving HRQOL in Latina survivors of breast cancer by targeting patient-centered cancer care practices, satisfaction with cancer care, and facets of self-efficacy is an important future direction. Although more advanced cancer stage was associated with greater self-efficacy (including confidence managing patient-provider communication, psychological distress, physical symptoms, and chores), this finding should be interpreted with caution since the current study highly oversampled participants with early-stage disease (ie, stages 0 to II) and excluded those with stage IV disease, resulting in truncated variance in cancer stage. Nevertheless, it is possible that within the very specific context of Latino cancer

survivors of primarily early-stage, nonmetastatic disease, higher stage disease provides more experience navigating clinical care and managing cancer-related symptoms and distress, thus resulting in higher levels of perceived confidence to manage these aspects of the cancer experience.

### Strengths and Limitations

The current study has several strengths, including its unique sample of underrepresented Latino cancer survivors and the use of path model analyses to examine the direct and indirect pathways through which satisfaction with cancer care experiences and facets of self-efficacy contribute to HRQOL. An additional strength of the current study is its focus on modifiable factors that may reduce disparities in HRQOL among Latino cancer survivors, as these factors can inform future intervention research. The primary limitation of the current study is its cross-sectional design. Although causal inference cannot be concluded given the cross-sectional design, we conducted analyses testing an alternative model reversing the direction of effects (ie, whether satisfaction with cancer care explained the relationship between facets of self-efficacy and HRQOL), which was not supported. Future research should use longitudinal designs to examine how these relationships unfold across time. In particular, a prospective design that establishes temporal precedence between satisfaction with cancer care, self-efficacy, and change across time in HRQOL is recommended. Future research also should examine the influence of providers' cultural competency and empathy[31] on satisfaction with cancer care, self-efficacy, and HRQOL among Latino cancer survivors, particularly those who are foreign-born, less acculturated, and monolingual Spanish-speaking.

## CONFLICT OF INTEREST DISCLOSURES

The authors made no disclosures.

## AUTHOR CONTRIBUTIONS

All authors contributed to the research and article. Conceptualization: **Patricia I. Moreno**, **Amelie G. Ramirez,** and **Frank J. Penedo**. Data curation: **Leopoldo Castillo**, **Edgar Munoz**, **Ryne Estabrook**, and **Arely Perez**. Formal analysis: **Patricia I. Moreno**, **Edgar Munoz**, and **Ryne Estabrook**. Funding acquisition: **Amelie G. Ramirez** and **Frank J. Penedo**. Investigation: **Amelie G.**

**Ramirez**, **Sandra L. San Miguel-Majors**, **Leopoldo Castillo**, **Kipling J. Gallion**, **Edgar Munoz**, **Ryne Estabrook**, **Arely Perez**, **Thomas Lad**, **Courtney Hollowell**, and **Frank J. Penedo**. Methodology: **Amelie G. Ramirez** and **Frank J. Penedo**. Project: **Patricia I. Moreno**. Project administration: **Amelie G. Ramirez**, **Leopoldo Castillo**, **Arely Perez**, and **Frank J. Penedo**. Resources: **Amelie G. Ramirez** and **Frank J. Penedo**. Software: **Patricia I. Moreno**, **Edgar Munoz**, and **Ryne Estabrook**. Supervision: **Amelie G. Ramirez** and **Frank J. Penedo**. Validation: **Patricia I. Moreno**, **Amelie G. Ramirez**, **Edgar Munoz**, and **Frank J. Penedo**. Visualization: **Patricia I. Moreno**. Writing-original draft: **Patricia I. Moreno**, **Amelie G. Ramirez**, **Sandra L. San Miguel-Majors**, **Rina S. Fox**, **Leopoldo Castillo**, **Kipling J. Gallion**, **Edgar Munoz**, **Ryne Estabrook**, **Arely Perez**, **Thomas Lad**, **Courtney Hollowell**, and **Frank J. Penedo**. Writing-review and editing: **Patricia I. Moreno**, **Amelie G. Ramirez**, **Sandra L. San Miguel-Majors**, **Rina S. Fox**, **Leopoldo Castillo**, **Kipling J. Gallion**, **Edgar Munoz**, **Ryne Estabrook**, **Arely Perez**, **Thomas Lad**, **Courtney Hollowell**, and **Frank J. Penedo**.

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