Satisfaction with Care among Low-Income Women with Breast Cancer

Amardeep Thind, M.D., Ph.D.,¹ Lalima Hoq, M.D., M.P.H.,² Allison Diamant, M.D., MSHS,³
and Rose C. Maly, M.D., MSPH⁴

Abstract

Background: Patient satisfaction is an important outcome measure in determining quality of care. There are few data evaluating patient satisfaction in nonwhite, low-income populations. The objective of this study was to identify the structure, process, and outcome factors that impact patient satisfaction with care in a low-income population of women with breast cancer.

Methods: In a cross-sectional survey of low-income women newly diagnosed with breast cancer, eligible women enrolled in the California Breast and Cervical Cancer Treatment Program (BCCTP) from February 2003 through September 2005 were interviewed by phone 6 months after their enrollment. This was a population-based sample of women aged ≥ 18 years ($n=924$) with a definitive diagnosis of breast cancer and enrolled in the BCCTP. The main outcome measure was satisfaction with care received.

Results: Random effects logistic regression revealed that less acculturated Latinas were more likely (odds ratio, [OR]=5.36, $p < 0.000$) to be extremely satisfied with their care compared with non-Hispanic white women. Women who believed they could have been diagnosed sooner were less likely to be extremely satisfied (OR=0.61, $p < 0.000$). Women who had received or were receiving radiotherapy or chemotherapy had nearly twice the odds of being extremely satisfied (OR=2.02, $p < 0.000$, and OR=2.13, $p < 0.000$, respectively). Greater information giving was associated with greater satisfaction (OR=1.17, $p < 0.000$). Women reporting greater physician emotional support were more likely to report being extremely satisfied (OR=1.26, $p < 0.000$). A higher participatory treatment decision-making score was associated with greater satisfaction (OR=1.78, $p < 0.000$).

Conclusions: In a low-income population, satisfaction is also reported at high levels. In addition to age, ethnicity/acculturation, receipt of chemotherapy and radiotherapy, physician emotional support, and collaborative decision making, perception of diagnostic delay is a predictor of dissatisfaction in this population.

Introduction

BREAST CANCER IS THE MOST common malignancy among women in the United States; it is estimated that approximately 178,000 new cases were diagnosed in 2007.¹ With the development of new treatment modalities, women have to make the choice of which modality they prefer, a decision ideally made in close consultation with the treating physician. As more patients become involved in such decision-making processes, evaluation of outcomes has expanded beyond the traditional measures of 5-year survival or interval disease-free survival to encompass domains of patient satisfaction and

quality of life.² For example, the National Health Service (NHS) in the United Kingdom has introduced the routine collection of patient-reported outcome measures assessed with the EQ-5D instrument starting April 2009.³

A recent review reported that the most commonly reported nonbiomedical breast cancer outcomes were health-related quality of life (reported in 54% of studies analyzed in the review), economic analysis (38%), and patient satisfaction (14%).² Only a few studies included more than a 10% nonwhite patient population,² however, raising the issue of generalizability of findings to the nonwhite population. In addition, women who have health insurance and who belong

¹Department of Family Medicine, Department of Epidemiology and Biostatistics, Schulich School of Medicine and Dentistry, The University of Western Ontario, London, Canada.

²Cedars-Sinai Medical Center, Los Angeles, California.

³Department of General Internal Medicine and ⁴Department of Family Medicine, David Geffen School of Medicine, University of California, Los Angeles, California.

to the middle or upper income groups are overrepresented in these studies.

As the minority proportion of our population continues to grow, we need to understand the experience of low-income or uninsured women as they navigate a complex healthcare system for their breast cancer treatment. Evidence exists that women who rate the quality of their healthcare to be excellent are more likely to engage in better cancer screening behaviors, such as receiving an annual clinical breast examination (CBE), conducting a monthly breast self-examination (BSE), and receiving an annual Pap smear.⁴ Satisfied patients are also more likely to adhere to recommended therapy, presumably leading to better outcomes.^{5,6}

Our study analyzed satisfaction with breast cancer care 6 months after definitive diagnosis in a large population-based cohort of low-income women with breast cancer receiving care through the California Breast and Cervical Cancer Treatment Program (BCCTP). Our goal was to identify the structure, process, and outcome factors that impact patient satisfaction with care.

Materials and Methods

Study design and data source

We conducted a cross-sectional survey of low-income women living in California aged ≥ 18 years and newly diagnosed with breast cancer. The study was approved by the UCLA Human Subjects Protection Committee. A consecutive sample of all women treated through the California BCCTP between February 2003 and September 2005 was recruited for the study. BCCTP is a Medicaid coverage option, legislated by the federal government as part of the Breast and Cervical Cancer Prevention and Treatment Act of 2000, to fund the treatment of breast and cervical cancer for uninsured and underinsured, low-income women ($\leq 200\%$ federal poverty level).

Eligible women were interviewed by phone at 6 months after their enrollment in BCCTP. Women who did not speak English or Spanish, had a previous history of breast cancer, or were receiving treatment for another cancer were excluded from the study. A total of 924 women aged ≥ 18 years who had been diagnosed with breast cancer were initially recruited

through the California BCCTP, with a 61% overall response rate. Compared with survey responders, nonresponders were older (52 vs. 50 years, $p < 0.05$), more likely to be Asian or African American and less likely to be Latina (9%, 8%, 46% vs. 4%, 6%, 56%, respectively, $p < 0.05$). Further details of the design and flow of the parent study can be found in a previously published article.⁷

Conceptual model

Our conceptual framework is adapted from the model by Mandelblatt et al.,⁸ with some domains based on the taxonomy of patient satisfaction with medical care by Ware et al.^{8,9} A similar model was used by Noh et al.¹⁰ in their analysis of patient satisfaction among breast cancer patients who underwent surgery.

We specify a set of structural, processes, and outcome variables as influencing patient-reported satisfaction with care at 6 months after the definitive diagnosis of breast cancer.¹¹ Structural characteristics include patient and system level characteristics that have been shown in the literature to impact patient satisfaction. These variables include sociodemographic characteristics (age, ethnicity, acculturation, marital status, and educational status), regular source of care, and patient self-efficacy in interacting with physicians. Receiving care in a specialized cancer center was a proxy for system level characteristics that could impact patient satisfaction.

Given that we assessed satisfaction at 6 months after definitive diagnosis, many women would have just completed or would have been in the midst of a course of treatment. Our framework posits that the processes of care and its outcomes would have an impact on patient satisfaction. Processes of care included the treatment received (surgery, chemotherapy, or radiotherapy), interactive information giving, support received (from both the physician and staff), and character of treatment decision making. In low-income populations, access to needed care and providers is a significant problem, so a variable assessing women's perception of whether they could have been diagnosed sooner was also included in the model (Fig. 1). Intermediate outcomes of care can also impact patient satisfaction.¹²⁻¹⁴ Our model posits that self-reported general health status, presence or absence of pain, nausea, and

FIG. 1. Model of patient-reported satisfaction 6 months after definitive surgery.

sadness/depression since diagnosis can impact patient satisfaction.

Variable specification

Our dependent variable was based on the response to the question: Overall, how satisfied have you been so far with your breast cancer care? This question has been used extensively in the literature.^{15–19} Response categories were based on a 5-point Likert scale: extremely satisfied, somewhat satisfied, neither satisfied nor dissatisfied, somewhat dissatisfied, and extremely dissatisfied. Because of the skewed nature of the responses (73.6% reported being extremely satisfied), we dichotomized the variable (extremely satisfied vs. not extremely satisfied).^{15,20}

Structural level independent variables included age (≤ 50 , > 50), marital status (coded yes if the woman was currently married or partnered, no if she was not), education (less than 12th grade, 12th grade or more), and having a regular source of care (yes, no). Ethnicity was coded as non-Hispanic white, African American, less acculturated Latina, more acculturated Latina, and other. Language use and preference among Latina women were determined by the five-item Marin Acculturation Scale.²¹ This scale asks respondents questions about the language(s) they (1) read and speak, (2) used as a child, (3) usually speak at home, (4) usually think in, and (5) usually speak with friends. Allowed responses to these questions were only Spanish, more Spanish than English, both equally, more English than Spanish, and English only. The internal consistency reliability was 0.99 for this scale. More acculturated Latina was defined as being equally or more comfortable or conversant with English as Spanish; less acculturated Latina was defined as being less comfortable or conversant with English than Spanish.

Self-efficacy was measured using the validated Perceived Efficacy in Patient-Physician Interactions (PEPPI) questionnaire.²² PEPPI measures patients' perceived ability to obtain needed medical information and attention to their chief medical concerns from physicians. The PEPPI sum scale has a range from 0 to 50; Cronbach's α for this scale was 0.96. The system variable was treatment in a cancer center, specifically an National Cancer Institute (NCI)-designated cancer center or an approved cancer center listed by the American College of Surgeons. Such care settings could be expected to be associated with enhanced patient satisfaction by providing continuity of and comprehensive cancer care.

Process level independent variables included the woman's perception of whether she could have been diagnosed sooner (yes, no), receipt of surgery (yes, no), and dichotomous variables to describe whether she was receiving or had received chemotherapy and was receiving or had received radiotherapy. Information giving was measured by a previously published index,²³ which asked patients how many of 15 breast cancer-related topics their physicians had discussed with them.

Emotional support received from physicians was measured on a scale constructed from the responses to the following three questions: (1) How often did your doctors allow you to express your feelings? (2) How often did your doctors show extreme compassion and care? (3) How often did your doctors listen very carefully to you? Responses to these questions were on a 4-point scale (never, sometimes, usually, always);

the scale constructed from these three items had a Cronbach's α of 0.91. The Appendix lists additional details of this measure.

Staff support was measured on a scale constructed from the following three questions: (1) How often did the nurses or staff listen to your concerns? (2) How often did the nurses or staff make sure you knew when or where to get the treatment you needed? (3) How often did the nurses or staff spend time explaining things to you? Responses to these questions were on a 4 point scale (never, sometimes, usually, always); the scale constructed from these three items had a Cronbach's α of 0.95. Treatment decision making was based on the question "How much did your breast cancer doctors ask you for your input or opinion about which treatment you preferred?"; this was entered as a continuous variable in the analysis, with a range from 1 (not at all) to 4 (a great deal). The Appendix lists additional details of these measures.

Outcomes of care were assessed with dichotomous variables for the presence of pain, nausea, and sadness/depression since diagnosis. Self-reported general health was assessed with the question: In general, would you say your health is . . . and was measured on a 5-point scale from 1 (poor) to 5 (excellent).

Data analysis

Data analysis was carried out using Stata/SE 10 (Stata Corp., College Station, TX). Unadjusted bivariate relationships between the dependent and independent variables were examined. To account for unobserved factors at the county level that could affect satisfaction, we conducted a multilevel logistic regression analysis by entering county as a random intercept in the model. All variables were entered into the model. The maximum log likelihood ratio chi-square test statistic was used to compare the logistic and the multilevel logistic regression model. This test indicated that the random county effects were statistically significant; that is, the multilevel logistic regression model was a better fit. We present the results of this model.

Results

Sample description

Our sample included 924 women who completed the interview. Half the women were aged ≤ 50 years, and half were > 50 years old; nearly 52% reported they were not married or partnered. A majority (59%) had more than a grade 12 education, and a similar percent reported having a regular source of care. Slightly less than half (49%) of our sample consisted of less acculturated Latinas, with non-Hispanic whites accounting for 32%. The mean PEPPI score (on a scale of 0–50) was 38.2 (Table 1).

Nearly 56% received care at a cancer center, and 46% reported they thought they could have been diagnosed sooner. The majority (88%) had undergone surgery and 68% had received or were receiving chemotherapy by the time of the interview. Only a quarter of women (26%) reported they had received or were receiving radiotherapy. Mean scores on the various scales were as follows: interactive information giving scale 9.5 (range 0–15), physician emotional support 9 (range 3–12), and staff support 9.3 (range 3–12). The mean treatment decision making score was 2.8 (range 1–4).

TABLE 1. SAMPLE CHARACTERISTICS (N=924)

Characteristic	n (%)
Structural characteristics: Patient	
Age	
≤50 years	455 (49.4)
>50 years	466 (50.6)
Ethnicity and acculturation	
White	292 (31.8)
African American	54 (5.9)
Latina, less acculturation	439 (47.5)
Latina, more acculturation	53 (5.8)
Other	83 (9)
Married/partnered	
No	477 (51.8)
Yes	444 (48.2)
Education less than grade 12	
No	545 (59.3)
Yes	374 (40.7)
Had a regular source of care	
No	380 (41.3)
Yes	541 (58.7)
PEPPI (Perceived Efficacy in Patient-Physician Interactions) score ^a	38.2 ^b (SD 11.5)
Structural characteristics: System	
Receiving care at a cancer center	
No	389 (44.4)
Yes	487 (55.6)
Process of care	
Could have been diagnosed sooner	
No	501 (54.5)
Yes	419 (45.5)
Had surgery	
No	105 (11.4)
Yes	816 (88.6)
Receiving/received chemotherapy	
No	290 (31.5)
Yes	631 (68.5)
Receiving/received radiotherapy	
No	676 (73.4)
Yes	245 (26.6)
Interactive information items sum ^c	9.5 ^b (SD 3.1)
Physician emotional support scale ^d	9 ^b (SD 2.8)
Nurse/staff support scale ^e	9.3 ^b (SD 2.9)
Treatment decision making score ^f	2.8 ^b (SD 1.1)
Outcomes of care	
Had pain since diagnosis	
Never, little	392 (42.6)
Some, most, all of the time	529 (57.4)
Had nausea since diagnosis	
Never, little	445 (48.3)
Some, most, all of the time	476 (51.7)
Had sadness/depression since diagnosis	
Never, little	328 (35.7)
Some, most, all of the time	591 (64.3)
Self-reported general health	3 ^b (SD 1)

^aRange 0–50.^bDenotes mean.^cRange 0–15.^dRange 0–12.^eRange 0–12.^fRange 1–4.

A majority of women reported having had pain since diagnosis (57%), and nearly two thirds reported feeling sad/depressed since diagnosis (64%). Only 52% reported having nausea since their breast cancer diagnosis; the mean score for self-reported general health was 3.

Bivariate analyses

Table 2 presents the unadjusted and adjusted odds ratios (ORs) for the association between the independent and dependent variables. In the unadjusted analyses, less acculturated Latinas had nearly twice the odds (OR = 1.89, $p < 0.000$) of being extremely satisfied with their care compared with non-Latina white women. Women who were married/partnered and those with less than a grade 12 education were more likely to be extremely satisfied compared with unmarried/unpartnered women and those with a 12th grade or higher education, respectively (OR = 1.42, $p < 0.02$, and OR = 1.59, $p < 0.003$, respectively). A higher PEPPI score was associated with greater satisfaction (OR = 1.03, $p < 0.000$).

Among the process of care variables, women who thought they could have been diagnosed sooner had 43% lesser odds of being extremely satisfied (OR = 0.57, $p < 0.000$). Women who had undergone surgery and those who had received/were receiving radiotherapy had nearly twice the odds of being extremely satisfied compared with those who had not undergone surgery or radiotherapy (OR = 1.86, $p < 0.004$, and OR = 2.22, $p < 0.000$, respectively). A higher score on the information giving scale was associated with greater satisfaction (OR = 1.72, $p < 0.000$, and OR = 1.21, $p < 0.000$, respectively). Physician emotional support and staff support were also significantly associated with satisfaction; women scoring higher on these scales were significantly more likely to report being extremely satisfied (OR = 1.37, $p < 0.000$, and OR = 1.22, $p < 0.000$, respectively). A higher participatory treatment decision making score was also associated with greater satisfaction (OR = 1.78, $p < 0.000$).

Among the outcome variables, women who reported being sad/depressed since diagnosis had lower odds of being extremely satisfied (OR = 0.60, $p < 0.002$), and women who reported better self-reported general health had greater odds of being extremely satisfied (OR = 1.19, $p < 0.02$). Having pain or nausea since diagnosis was not related to satisfaction.

Regression analyses

The third column in Table 2 shows the results of the multilevel logistic regression analysis in which we adjusted the ORs for other variables in the model while simultaneously entering the county as a random variable (random intercept). The multilevel model fit the data better than the logistic regression (likelihood ratio test vs. logistic regression, $p < 0.05$); the proportion of variance unexplained at the county level was 2.3% ($\rho = 0.023$).

In the adjusted analysis, among the structural independent variables, age and ethnicity remained statistically significant. Older women had a 64% higher odds of being extremely satisfied compared with younger (≤50 years) women (OR = 1.64, $p < 0.006$). Less acculturated Latinas had five times the odds of being extremely satisfied compared with non-Hispanic white women (OR = 5.36, $p < 0.001$). Marital status, education, and patient self-efficacy were not significantly

TABLE 2. UNADJUSTED AND ADJUSTED ODDS RATIOS OF DETERMINANTS OF WOMEN BEING EXTREMELY SATISFIED WITH BREAST CANCER CARE AT 6 MONTHS (*N* = 916)

	<i>Unadjusted OR (95% CI)</i>	<i>Adjusted OR^a (95% CI)</i>
Structural characteristics: Patient		
Age		
≤50 years	–	–
>50 years	1.18 (0.88-1.58)	1.64 (1.10-2.45)
Ethnicity and acculturation		
White	–	–
African American	0.76 (0.41-1.39)	0.61 (0.29-1.31)
Latina, less acculturation	1.89 (1.43-2.67)	5.36 (2.97-9.66)
Latina, more acculturation	1.03 (0.54-1.94)	0.92 (0.41-2.01)
Other	0.68 (0.41-1.12)	0.89 (0.46-1.72)
Married/partnered		
No	–	–
Yes	1.42 (1.06-1.91)	1.02 (0.68-1.52)
Education less than grade 12		
No	–	–
Yes	1.59 (1.66-2.17)	1.15 (0.72-1.83)
Had a regular source of care		
No	–	–
Yes	1.29 (0.96-1.73)	0.84 (0.56-1.23)
PEPPI (Perceived Efficacy in Patient-Physician Interactions) score	1.03 (1.02-1.05)	1.01 (0.98-1.02)
Structural characteristics: System		
Receiving care at a cancer center		
No	–	–
Yes	1.06 (0.78-1.43)	1.31 (0.88-1.94)
Process of care		
Could have been diagnosed sooner		
No	–	–
Yes	0.57 (0.42-0.76)	0.61 (0.42-0.90)
Had surgery		
No	–	–
Yes	1.86 (1.22-2.84)	0.89 (0.49-1.58)
Receiving/received chemotherapy		
No	–	–
Yes	1.21 (0.89-1.65)	2.02 (1.19-3.41)
Receiving/received radiotherapy		
No	–	–
Yes	2.2 (1.51-3.20)	2.13 (1.29-3.51)
Interactive information items sum	1.21 (1.15-1.28)	1.17 (1.08-1.26)
Physician emotional support scale	1.37 (1.30-1.45)	1.27 (1.16-1.39)
Nurse/staff support scale	1.22 (1.16-1.28)	1.07 (0.99-1.07)
Treatment decision making score	1.78 (1.56-2.04)	1.26 (1.06-1.51)
Outcomes of care		
Had pain since diagnosis		
Never, little	–	–
Some, most, all of the time	0.76 (0.56-1.02)	0.82 (0.55-1.21)
Had nausea since diagnosis		
Never, little	–	–
Some, most, all of the time	0.87 (0.65-1.16)	0.70 (0.43-1.12)
Had sadness/depression since diagnosis		
Never, little	–	–
Some, most, all of the time	0.60 (0.43-0.83)	0.73 (0.48-1.10)
Self-reported general health	1.19 (1.03-1.38)	0.98 (0.80-1.19)
Random effects		
Intercept variance		0.084 (95% CI 0.013-0.542)

^aAdjusted odds ratios are from the multilevel logistic regression model controlling for other covariates, with county entered as a random effect.

associated with satisfaction once other variables had been controlled for.

Among the process of care variables, women who thought they could have been diagnosed sooner had 39% lesser odds of being extremely satisfied ($OR = 0.61$, $p < 0.02$). Women who had received/were receiving chemotherapy or radiotherapy had nearly twice the odds of being extremely satisfied ($OR = 2.02$, $p < 0.027$, and $OR = 2.13$, $p < 0.006$, respectively) compared with women who had not received these treatment modalities. Women who scored higher on the information giving scale were more likely to report being extremely satisfied ($OR = 1.17$, $p < 0.006$), as were women who received more emotional support from the physicians ($OR = 1.27$, $p < 0.000$). A higher participatory treatment decision making score was also associated with the women reporting satisfaction ($OR = 1.26$, $p < 0.026$). None of the outcomes of care variables were significantly associated with satisfaction once other variables had been controlled for in the regression analysis.

Discussion

Ours is the first large population-based cohort study of low-income women to examine the determinants of patient satisfaction with breast cancer treatment. Nearly three quarters of women in our sample reported they were extremely satisfied with the breast cancer care they had received. This high rate of satisfaction has been noted in the literature.^{10,16,18–20,24–26} Explanations for such elevated satisfaction rates include fear of losing services, social desirability bias, or ingratiating response bias, which could occur when patients attempt to ingratiate themselves with the researchers/providers, especially when confidentiality cannot be assured in the survey.²⁷ Other authors postulate that respondents may be reluctant to criticize for fear of unfavorable treatment in the future²⁸ or that dissatisfaction is expressed only when an extreme negative event occurs.²⁹

Our sample consisted of women who had been enabled by the BCCTP in terms of providing them access to breast cancer care that they possibly would not have received otherwise or would have accessed with much greater difficulty. In such a scenario, it is plausible that the high reported satisfaction rate is an accurate representation of the true rate of satisfaction in our sample.

In terms of the determinants of satisfaction, older women were more likely to be extremely satisfied compared with younger women. Evidence suggests that older people tend to be more satisfied with their healthcare provision in both the primary care and in-hospital settings.^{30–32} Possible reasons for this are postulated to be more modest expectations in the elderly and their reluctance to criticize.³³

Less acculturated Latinas had five times the odds of non-Hispanic white women of being extremely satisfied. This effect size is more than twice the effect size noted in the unadjusted analysis. After controlling for education, marital/partner status, and self-efficacy, we are left with the pure effect of ethnicity and acculturation in the model. It is conceivable that less acculturated Latinas are more satisfied because of the greater gratitude they feel on having received care for breast cancer than others, who might have better access to care. Their expectations from the system may be lower than those of the more acculturated Latinas, who by virtue of being

more familiar with their environment may have higher expectations in line with those of native-born women. This reasoning is in contrast to that of Fitzpatrick's theory of "the need for the familiar" determining patient satisfaction, which states that patients from cultures/ethnicities different from the West are unlikely to be familiar with the medical canons and, thus, less likely to be satisfied.³⁴

An important finding of our analysis was the lower odds of satisfaction among women who believed they could have been diagnosed sooner. Arriving at a diagnosis of breast cancer is a process that begins with the woman (or her physician) finding an abnormality, deciding to get it investigated further, and interaction with the healthcare system for a definitive diagnosis, which could involve visits to multiple providers and coordination among them. This process may be delayed in women who do not have health insurance and, thus, face greater barriers to accessing care. In our sample, slightly more than half the women (51%) had a >60-day delay between the time they first became aware that something was wrong to their biopsy or surgery. This diagnostic delay could be the result of individual level factors (e.g., financial or transport barriers, regret at not getting regular mammograms), system level factors (e.g., long waiting times or repeat biopsies); it could also represent the overall dissatisfaction at the late stage of diagnosis. Nonetheless, it is important to realize that this perceived delay can have a negative impact on self-reported satisfaction with care.

Women who received or were continuing to receive chemotherapy or radiotherapy were more likely to report being extremely satisfied. This could be a reflection of their perception that all that was possible was being done in terms of treatment to help them overcome their cancer, as exemplified by Wensing's theory of goal seeking, which avers that major concerns for patients are resolution of their health problems.³⁵ Noh et al.¹⁰ also found receipt of radiotherapy to be a significant determinant of patient satisfaction after breast cancer surgery. It should be noted, however, that not all women would benefit from these treatment options, and those not receiving chemotherapy or radiotherapy may include those who did not follow treatment plans, those who did not need it, and women who did not have the time to travel to the clinic to complete the chemotherapy or radiotherapy.

Additionally, increased information giving was strongly associated with greater satisfaction, which is in consonance with the literature.^{36,37} For example, Liang et al.³⁷ found that greater patient-physician communication was associated with a sense of choice, treatment, and satisfaction with care in older women with breast cancer. Furthermore, physician emotional support was also strongly associated with satisfaction and supports findings in the literature.^{36,38,39} Ben-Sira's work⁴⁰ in primary care found that satisfaction with treatment by general practitioners was related to perceptions of interest and devotion by the physician rather than to technical skills. A similar finding was reported by Silliman et al.,⁴¹ who found that older women with breast cancer relied heavily on their physicians for support.

Finally, greater physician solicitation of patient input in the decision-making process was associated with greater satisfaction, similar to what has been reported in the literature.^{15,42–46} This finding in our population is noteworthy because it indicates that even in a relatively disempowered

population, participatory decision making independently affects satisfaction. Modifying such physician behavior could be a valuable target in this population for improving satisfaction, in addition to modifying training programs for physicians so as not to assume that lower socioeconomic patients should be communicated with in a paternalistic fashion. This finding must be modulated by the fact that not all women may want or desire a highly participatory role in decision making.^{47,48} One study found that nearly 69% of patients preferred a passive role in decision making,⁴⁹ and a meta-analysis of patient preference studies reported that most studies found higher proportions of patients desiring information rather than a greater role in decision making.⁵⁰

Patients who have emigrated from societies with healthcare systems characterized by paternalistic decision making may be uncomfortable with a participatory approach. It is plausible that for many of the Latina women in our sample, the discussion with the surgeon about the choice between lumpectomy and mastectomy could have been their first experience of being involved in medical decision making.

In terms of healthcare policy, our results indicate that interventions, such as Continuing Medical Education for physicians focusing on improving communication skills, which have been shown to improve patient satisfaction,⁵¹ could also be beneficial for this provider/patient population. Women report high levels of need for information on a variety of issues pertaining to breast cancer,⁵² and such information giving can be augmented by the provision of specialized media, such as the Interactive Breast Cancer CDROM,⁵³ patient-focused psychoeducational interventions,⁵⁴ or a decision board.⁵⁵ Interventions to address informational needs must ensure that they address a woman's needs throughout her treatment and are not a one-time event. A formal approach, along the lines of the Breast Buddy Breast Care Program at Kaiser Permanente, can be used to combine these patient level interventions with a patient advocate and mentoring from breast cancer survivors.¹⁸ Modifying physician behavior when interacting with such disempowered populations by actively soliciting their input in decision making and by targeting outreach activities in these communities (i.e., with access barriers that lead to perceptions of diagnostic delay) are other actionable policy recommendations.

Although our results were obtained from a large population-based cohort of women, a few caveats should be kept in mind. Because the study was conducted in a sample of low-income, medically underserved women in a specific Medicaid breast cancer treatment program in California, external generalizability of the findings to other low-income populations may be limited. Further, the cross-sectional study design prevents an assumption of causality between predictor and dependent variables. We measured satisfaction with a single question, which precluded an examination of the different constructs of satisfaction. In addition, we did not have data on stage of disease, patient coping style, or personality, which may affect patient satisfaction,^{17,56} although a recent study reported that stage of breast cancer was not associated with surgery satisfaction.²⁰ Finally, the quality of our data depends on the accuracy of patient self-report on physician communication; thus, recall bias may be an issue in our study. However, it has been noted that people who have undergone a sudden and life-threatening health crisis manifest very clear recall of the details surrounding the event⁵⁷; breast cancer patients, for

example, can recall the precise time they first noticed their symptoms.⁵⁸

In conclusion, our population-based analysis shows that satisfaction is an important outcome in this population and is reported at high levels similar to those found in other, more enabled populations, but its determinants are unique. Age, ethnicity/accluturation, receipt of chemotherapy and radiotherapy, physician emotional support, and collaborative decision making impact on satisfaction in low-income breast cancer patients. In addition, the perception of diagnostic delay is a strong predictor of low satisfaction in this group, an aspect that has not been highlighted in the literature.

Acknowledgments

A.T. is funded by the Canada Research Chairs Program. This study was funded by the American Cancer Society (TURSG-02-081) and the California Breast Cancer Research Program (7PB-0070). A.T. had full access to the data in the study and takes responsibility for the integrity of the data and accuracy of the data analysis.

Disclosure Statement

The authors have no conflicts of interest to report.

References

1. American Cancer Society. Breast cancer facts & figures: 2007–2008. Atlanta: American Cancer Society, 2007.
2. Mandelblatt J, Armetta C, Yabroff KR, Liang W, Lawrence W. Descriptive review of the literature on breast cancer outcomes: 1990 through 2000. *J Natl Cancer Inst Monogr* 2004;33:8–44.
3. Hawkes N. How do we get the measure of patient care? *BMJ* 2008;336:249.
4. Borders TF, Warner RD, Sutkin G. Satisfaction with health care and cancer screening practices among women in a largely rural region of West Texas. *Prev Med* 2003;36:652–658.
5. Rosenthal GE, Shannon SE. The use of patient perceptions in the evaluation of health-care delivery systems. *Med Care* 1997;35(Suppl 11):NS58–68.
6. Aharony L, Strasser S. Patient satisfaction: What we know about and what we still need to explore. *Med Care Rev* 1993;50:49–79.
7. Chen JY, Diamant AL, Thind A, Maly RC. Determinants of breast cancer knowledge among newly diagnosed, low-income, medically underserved women with breast cancer. *Cancer* 2008;112:1153–1161.
8. Mandelblatt J, Figueiredo M, Cullen J. Outcomes and quality of life following breast cancer treatment in older women: When, why, how much, and what do women want? *Health Qual Life Outcomes* 2003;1:45.
9. Ware JE Jr, Snyder MK, Wright WR, Davies AR. Defining and measuring patient satisfaction with medical care. *Eval Program Plann* 1983;6:247–263.
10. Noh DY, Nam SJ, Ahn SH, et al. Association of clinical experiences with patient-reported outcomes among breast cancer surgery patients: Breast cancer quality care study. *Qual Life Res* 2007;17:215–225.
11. Donabedian A. Evaluating the quality of medical care. *Milbank Mem Fund Q* 1966;44(Suppl):166–206.
12. Gupta D, Lis CG, Grutsch JF. The relationship between dyspnea and patient satisfaction with quality of life in advanced cancer. *Support Care Cancer* 2007;15:533–538.

13. Gupta D, Lis CG, Grutsch JF. The relationship between cancer-related fatigue and patient satisfaction with quality of life in cancer. *J Pain Symptom Manage* 2007;34:40–47.
14. Kane RL, Maciejewski M, Finch M. The relationship of patient satisfaction with care and clinical outcomes. *Med Care* 1997;35:714–730.
15. Mandelblatt J, Kreling B, Figueiredo M, Feng S. What is the impact of shared decision making on treatment and outcomes for older women with breast cancer? *J Clin Oncol* 2006;24:4908–4913.
16. Bui QU, Ostir GV, Kuo YF, Freeman J, Goodwin JS. Relationship of depression to patient satisfaction: Findings from the barriers to breast cancer study. *Breast Cancer Res Treat* 2005;89:23–28.
17. Mandelblatt JS, Edge SB, Meropol NJ, et al. Predictors of long-term outcomes in older breast cancer survivors: Perceptions versus patterns of care. *J Clin Oncol* 2003;21:855–863.
18. Geiger AM, Mullen ES, Sloman PA, Edgerton BW, Petitti DB. Evaluation of a breast cancer patient information and support program. *Effective Clin Pract* 2000;3:157–165.
19. Jansen SJ, Otten W, van de Velde CJ, Nortier JW, Stiggelbout AM. The impact of the perception of treatment choice on satisfaction with treatment, experienced chemotherapy burden and current quality of life. *Br J Cancer* 2004;91:56–61.
20. Lantz PM, Janz NK, Fagerlin A, et al. Satisfaction with surgery outcomes and the decision process in a population-based sample of women with breast cancer. *Health Serv Res* 2005;40:745–767.
21. Marin G, Sabogal F, Marin B. Development of a short acculturation scale for Hispanics. *Hispanic J Behav Sci* 1987;9:183–205.
22. Maly RC, Frank JC, Marshall GN, DiMatteo MR, Reuben DB. Perceived Efficacy in Patient-Physician Interactions (PEPPI): Validation of an instrument in older persons. *J Am Geriatr Soc* 1998;46:889–894.
23. Maly RC, Leake B, Silliman RA. Health care disparities in older patients with breast carcinoma: Informational support from physicians. *Cancer* 2003;15:97:1517–1527.
24. Marchal F, Dravet F, Classe JM, et al. Postoperative care and patient satisfaction after ambulatory surgery for breast cancer patients. *Eur J Surg Oncol* 2005;31:495–499.
25. Bredart A, Bouleuc C, Dolbeault S. Doctor-patient communication and satisfaction with care in oncology. *Curr Opin Oncol* 2005;17:351–354.
26. Katz SJ, Lantz PM, Paredes Y, et al. Breast cancer treatment experiences of Latinas in Los Angeles County. *Am J Public Health* 2005;95:2225–2230.
27. Sitzia J, Wood N. Patient satisfaction: A review of issues and concepts. *Soc Sci Med* 1997;45:1829–1843.
28. Raphael W. Do we know what the patients think? A survey comparing the views of patients, staff and committee members. *Int J Nurs Stud* 1967;4:209–223.
29. Williams B. Patient satisfaction: A valid concept? *Soc Sci Med* 1994;38:509–516.
30. Williams SJ, Calnan M. Convergence and divergence: Assessing criteria of consumer satisfaction across general practice, dental and hospital care settings. *Soc Sci Med* 1991;33:707–716.
31. Hopton JL, Howie JG, Porter AM. The need for another look at the patient in general practice satisfaction surveys. *Fam Pract* 1993;10:82–87.
32. Blanchard CG, Labrecque MS, Ruckdeschel JC, Blanchard EB. Physician behaviors, patient perceptions, and patient characteristics as predictors of satisfaction of hospitalized adult cancer patients. *Cancer* 1990;65:186–192.
33. Salvage AV, Vetter NJ, Jones DA. Attitudes to hospital care among a community sample of people aged 75 and older. *Age Ageing* 1988;17:270–274.
34. Fitzpatrick R. Satisfaction with health care. In: Fitzpatrick R, ed. *The experience of illness*. London: Tavistock, 1984:154–175.
35. Wensing M, Grol R, Smits A. Quality judgements by patients on general practice care: A literature analysis. *Soc Sci Med* 1994;38:45–53.
36. Thomsen DK, Pedersen AF, Johansen MB, Jensen AB, Zachariae R. Breast cancer patients' narratives about positive and negative communication experiences. *Acta Oncol* 2007;46:900–908.
37. Liang W, Burnett CB, Rowland JH, et al. Communication between physicians and older women with localized breast cancer: Implications for treatment and patient satisfaction. *J Clin Oncol* 2002;20:1008–1016.
38. Arora NK, Finney Rutten LJ, Gustafson DH, Moser R, Hawkins RP. Perceived helpfulness and impact of social support provided by family, friends, and health care providers to women newly diagnosed with breast cancer. *Psychooncology* 2007;16:474–486.
39. Moyer A, Salovey P. Patient participation in treatment decision making and the psychological consequences of breast cancer surgery. *Womens Health* 1998;4:103–116.
40. Ben-Sira Z. The function of the professional's affective behavior in client satisfaction: A revised approach to social interaction theory. *J Health Soc Behav* 1976;17:3–11.
41. Silliman RA, Dukes KA, Sullivan LM, Kaplan SH. Breast cancer care in older women: Sources of information, social support, and emotional health outcomes. *Cancer* 1998;83:706–711.
42. Fallowfield LJ, Hall A, Maguire GP, Baum M. Psychological outcomes of different treatment policies in women with early breast cancer outside a clinical trial. *BMJ* 1990;301:575–580.
43. Morris J, Ingham R. Choice of surgery for early breast cancer: Psychosocial considerations. *Soc Sci Med* 1988;27:1257–1262.
44. Cassileth BR, Zupkis RV, Sutton-Smith K, March V. Information and participation preferences among cancer patients. *Ann Intern Med* 1980;92:832–836.
45. Deadman JM, Leinster SJ, Owens RG, Dewey ME, Slade PD. Taking responsibility for cancer treatment. *Soc Sci Med* 2001;53:669–677.
46. Gattellari M, Butow PN, Tattersall MH. Sharing decisions in cancer care. *Soc Sci Med* 2001;52:1865–1878.
47. Collins ED, Kerrigan CL, Anglade P. Surgical treatment of early breast cancer: What would surgeons choose for themselves? *Effective Clin Pract* 1999;2:149–151.
48. Fallowfield L. Offering choice of surgical treatment to women with breast cancer. *Patient Educ Couns* 1997;30:209–214.
49. Arora NK, McHorney CA. Patient preferences for medical decision making: Who really wants to participate? *Med Care* 2000;38:335–341.
50. Benbassat J, Pilpel D, Tidhar M. Patients' preferences for participation in clinical decision making: A review of published surveys. *Behav Med* 1998;24:81–88.
51. Hietanen PS, Aro AR, Holli KA, Schreck M, Peura A, Joensuu HT. A short communication course for physicians improves the quality of patient information in a clinical trial. *Acta Oncol* 2007;46:42–48.

52. Raupach JC, Hiller JE. Information and support for women following the primary treatment of breast cancer. *Health Expect* 2002;5:289–301.
53. Molenaar S, Sprangers MA, Rutgers EJ, et al. Decision support for patients with early-stage breast cancer: Effects of an interactive breast cancer CDROM on treatment decision, satisfaction, and quality of life. *J Clin Oncol* 2001;19:1676–1687.
54. Okamura H, Fukui S, Nagasaka Y, Koike M, Uchitomi Y. Psychoeducational intervention for patients with primary breast cancer and patient satisfaction with information: An exploratory analysis. *Breast Cancer Res Treat* 2003;80:331–338.
55. Whelan T, Levine M, Willan A, et al. Effect of a decision aid on knowledge and treatment decision making for breast cancer surgery: A randomized trial. *JAMA* 2004;292:435–441.
56. Bitar R, Bezjak A, Mah K, Loblaw DA, Gotowiec AP, Devins GM. Does tumor status influence cancer patients' satisfaction with the doctor-patient interaction? *Support Care Cancer* 2004;12:34–40.
57. Winograd E, Neisser U. Affect and accuracy in recall: Studies of "flashbulb" memories. New York: Cambridge University Press, 1992.
58. Burgess CC, Ramirez AJ, Richards MA, Love SB. Who and what influences delayed presentation in breast cancer? *Br J Cancer* 1998;77:1343–1348.

Address correspondence to:

Amardeep Thind, M.D., Ph.D.

Associate Professor

Department of Family Medicine

Department of Epidemiology and Biostatistics

245-100 Collip Circle

London, On N6G 4X8

Canada

E-mail: athind2@uwo.ca

APPENDIX: ADDITIONAL DETAILS

	n (%)
<i>Physician emotional support scale</i>	
1. How often did your doctors allow you to express all your feelings?	
1 Never	125 (13.6%)
2 Sometimes	225 (24.4%)
3 Usually	218 (23.7%)
4 Always	353 (38.3%)
2. How often did your doctors show extreme compassion and caring?	
1 Never	79 (8.6%)
2 Sometimes	199 (21.6%)
3 Usually	240 (26.1%)
4 Always	403 (37.7%)
3. How often did your doctors listen very carefully to you?	
1 Never	64 (7%)
2 Sometimes	194 (21.1%)
3 Usually	215 (23.3%)
4 Always	448 (48.6%)
<i>Nurse or staff support scale</i>	
1. How often did the nurses or staff listen to your concerns?	
1 Never	77 (8.4%)
2 Sometimes	193 (21%)
3 Usually	223 (24.2%)
4 Always	427 (46.4%)
2. How often did the nurses or staff make sure you knew when or where to get the treatment you needed?	
1 Never	78 (8.5%)
2 Sometimes	184 (20%)
3 Usually	202 (22%)
4 Always	454 (49.5%)
3. How often did nurses or staff spend time explaining things to you?	
1 Never	75 (8.2%)
2 Sometimes	194 (21.1%)
3 Usually	216 (23.5%)
4 Always	434 (47.2%)
<i>Treatment decision making score</i>	
1. How much did your breast cancer doctors ask you for your input or opinion about which treatment you preferred?	
4 A great deal	346 (37.7%)
3 Somewhat	255 (27.8%)
2 Not much	147 (16%)
1 Not at all	171 (18.5%)
<i>Self-reported general health</i>	
1. In general, would you say your health is...	
5 Excellent	86 (9.4%)
4 Very good	176 (19.1%)
3 Good	360 (39.1%)
2 Fair	259 (28.2%)
1 Poor	39 (4.2%)