

# Quality of Life, Mood, and Prognostic Understanding in Patients with Metastatic Breast Cancer

Jennifer A. Shin, MD, MPH,<sup>1</sup> Areej El-Jawahri, MD,<sup>1</sup> Amanda Parkes, MD,<sup>2</sup>  
Stephen M. Schleicher, MD, MBA,<sup>3</sup> Helen P. Knight, BA,<sup>4</sup> and Jennifer S. Temel, MD<sup>1</sup>

## Abstract

**Background:** Although breast cancer is the second leading cause of cancer-related mortality in women in the United States, few studies focus on the supportive care needs of patients living with metastatic breast cancer (MBC).

**Objective:** We studied quality of life (QOL), depression, anxiety, and prognostic understanding of patients with MBC.

**Design:** We conducted a cross-sectional study of 140 patients with MBC, stratified by receipt of endocrine therapy or chemotherapy.

**Measurements:** We evaluated anxiety and depression using the Hospital Anxiety and Depression Scale (HADS). We assessed QOL using the Functional Assessment of Cancer Therapy-Breast (FACT-B), specifically measuring the FACT-B Trial Outcome Index (TOI), which includes physical and functional well-being and breast cancer-specific symptoms. Higher FACT-B TOI scores represent better QOL. We used a 12-item questionnaire to assess patients' perceptions of their prognosis and goals of therapy.

**Results:** Compared to those taking endocrine therapy ( $n=40$ ), patients receiving chemotherapy ( $n=100$ ) reported lower scores on the FACT-B TOI (66.1 versus 72.5,  $p<0.01$ ) and more depression symptoms (HADS-D  $>7$ ; 22% versus 7.5%,  $p=0.03$ ). Higher scores on the FACT-B TOI were associated with lower depression ( $\beta$ ,  $-0.16$ ;  $p<0.01$ ) and anxiety ( $\beta$ ,  $-0.11$ ;  $p<0.01$ ), and patients who reported frequent prognostic conversations with their oncologists had less depression ( $\beta$ ,  $-1.28$ ;  $p<0.01$ ). Thirty-nine percent (54/140) reported that their cancer was likely curable.

**Conclusion:** Patients with MBC, particularly those treated with chemotherapy, may benefit from interventions to address their physical, functional, and breast cancer-related symptoms. Many do not report accurate prognostic understanding, and more frequent prognostic conversations might address this information gap.

## Introduction

ALTHOUGH A QUARTER of women diagnosed with metastatic breast cancer (MBC) are surviving 5 years or longer, breast cancer remains the second leading cause of cancer-related mortality in women in the United States.<sup>1,2</sup> It is therefore imperative to understand the symptom burden and prognostic understanding in this large population of patients who are living with MBC. While numerous studies have examined cancer-related quality of life (QOL) in patients with early-stage breast cancer and breast cancer

survivors, few have focused on the physical and psychological well-being of those living with MBC.<sup>3</sup> As patients with MBC are surviving longer with the advent of new treatment options,<sup>4,5</sup> better understanding of the supportive care needs in this population will become increasingly important.

Although prior work has demonstrated the significant symptom burden in this population,<sup>6-9</sup> there is minimal research highlighting subgroups of patients among those with MBC who may have more significant physical and psychological distress. However, identifying those subgroups of

<sup>1</sup>Department of Medicine, Division of Hematology and Oncology, Massachusetts General Hospital Cancer Center, Harvard Medical School, Boston, Massachusetts.

<sup>2</sup>MD Anderson Cancer Center, Houston, Texas.

<sup>3</sup>Memorial Sloan Kettering Cancer Center, New York, New York.

<sup>4</sup>Johns Hopkins School of Medicine, Baltimore, Maryland.

Accepted April 1, 2016.

patients with MBC who have greater supportive care needs is challenging due to the heterogeneous nature of the disease. In addition, the available treatment options for MBC range from multiple oral endocrine therapies to numerous chemotherapeutic agents, with varying side effect profiles that may impact QOL.<sup>10</sup> However, it is not known whether receipt of endocrine therapy versus chemotherapy differentially impacts QOL, depression, and anxiety. Identifying the clinical and treatment variables that impact symptoms and psychological distress would allow us to define a target population with more pressing supportive care needs.

Assessing prognostic understanding is also a critical component of characterizing the needs of patients with MBC, who often have longer disease trajectories and survival than patients with other metastatic solid malignancies.<sup>2</sup> Patients with metastatic cancer and their families report a desire to receive timely and realistic prognostic information.<sup>11–13</sup> Importantly, patients' understanding of their illness and prognosis strongly predicts treatment decision making at the end of life.<sup>14,15</sup> However, patients with metastatic cancer often hold inaccurate perceptions of their prognoses and do not understand that chemotherapy is unlikely to be curative.<sup>16,17</sup> To date, there are limited data on prognostic understanding among patients with MBC.

To better understand the supportive care needs of patients with MBC, we assessed QOL, depression, anxiety, and perceptions of prognosis in a cross-sectional study of 140 patients with MBC. We stratified patients by receipt of endocrine therapy or chemotherapy to assess whether symptom burden and prognostic understanding differed between cancer treatment groups. By more precisely characterizing the physical and psychological symptom burden and prognostic understanding in patients with MBC, we hope to create a framework for designing targeted interventions to address the symptoms, psychological distress, and illness understanding in patients with MBC.

## Methods

### Patient selection

We recruited consecutive patients with MBC in the ambulatory care clinic at the Massachusetts General Hospital Cancer Center treated with endocrine therapy (40 patients), first- or second-line chemotherapy (50 patients), and third-line chemotherapy and beyond (50 patients). Due to the relatively small number of patients receiving endocrine therapy, this group was slow to accrue, and we decreased the sample size of this cohort from 50 to 40 participants. Female patients were eligible for study participation if they were age  $\geq 18$  years, were able to read and respond to questions in English, and if they were diagnosed with MBC  $\geq 6$  months before study enrollment. We chose this time period to allow adequate time for a discussion between patients and their oncologists regarding prognosis and goals of cancer treatments. Patients may have had a previous diagnosis of an early-stage breast cancer. We excluded patients with a significant psychiatric or other comorbid disease, which the treating clinician believed prohibited informed consent. We also excluded patients from the study if they were not receiving active treatment for MBC or if they were receiving active treatment for a cancer other than MBC.

### Study design

After approval by the institutional review board for all study procedures, a trained research assistant (RA) identified patients with a diagnosis of MBC through the electronic medical record by querying the list of patients scheduled in the breast cancer clinic each week. The RA contacted the oncology clinician by e-mail at least 24 hours before the patient's scheduled appointment to ensure that the patient was an appropriate study participant and to allow the oncologist the ability to opt the patient out of the study. If the oncology clinician expressed no concerns regarding the patient's participation, the RA approached the patient during her visit and asked if she was interested in participating. Patients interested in participating provided written informed consent. The RA administered the questionnaires at the time of consent or scheduled an appointment to do so during a future clinic visit. We recruited patients consecutively until we achieved a sample size of 140 participants, and we documented reasons that patients refused to participate.

### Study measures

**Demographic and clinical factors.** Participants completed a demographic questionnaire and provided information regarding their race, ethnicity, education, marital status, number of children, and self-report of health status. We reviewed the patients' electronic medical record to obtain information about their age, religion, cancer diagnosis, and treatment history.

**QOL.** We utilized the Functional Assessment of Cancer Therapy-Breast (FACT-B) Questionnaire to measure QOL, which has been previously validated.<sup>18</sup> The FACT-B consists of four subscales assessing physical, social/family, emotional, and functional well-being, and breast cancer symptoms over the prior 7 days. We calculated the FACT-B Trial Outcome Index (TOI), which is the sum of the physical, functional, and breast subscales, with higher scores indicating better QOL.

**Anxiety and Depression.** We used the Hospital Anxiety and Depression Scale (HADS) to assess symptoms of anxiety and depression in study participants. The HADS is a 14-item questionnaire that contains two 7-item subscales assessing anxiety and depression symptoms during the past week.<sup>19</sup> The questionnaire consists of a four-point item response format that quantifies the degree to which participants experience a particular emotion. Scores on each subscale range from 0 (no distress) to 21 (maximum distress). We analyzed the scores continuously, with higher scores signifying greater symptom burden, and categorically, with a cutoff of greater than 7 denoting clinically significant anxiety and depression symptoms.

**Information preferences and frequency of prognostic conversations.** We measured self-reported prognostic understanding using 12 of 13 items from the Prognosis and Treatment Perceptions Questionnaire (PTPQ), which assesses a patient's beliefs about the likelihood of cure, the importance and helpfulness of knowing about prognosis, the primary goal of cancer treatment, the preferences for information about treatment, and the satisfaction with quality of

information provided regarding prognosis and treatment. The PTPQ was adapted for adult cancer patients from a validated questionnaire of parents of children with cancer and additional validated items from prior studies.<sup>20–25</sup> Each item on the questionnaire is scored individually with statements about the degree to which the patient endorses each item. We omitted one question pertaining to goals of care at the end of life.

Participants reported their preference for receiving information about diagnosis and treatment as one of the following: “prefer not to hear a lot of details,” “want to hear details only in certain situations,” or “want to hear as many details as possible.” Participants also rated the importance of knowing about their prognosis on a five-point scale, ranging from “not at all important” to “extremely important.” Participants reported how often they have had a conversation with their oncologist about their prognosis as “never,” “rarely,” “sometimes,” “often,” and “very often.”

**Prognostic understanding and primary treatment goal.** We used items from the PTPQ to assess participants’ prognostic understanding and treatment goals. To assess perception of prognosis, we asked participants to rate the likelihood that they would be cured of cancer on a seven-point scale that ranged from “no chance—0% chance of cure” to “extremely likely—more than 90% chance of cure.” We dichotomized responses into patients’ perception of a low likelihood of cure, (defined as “no chance—0% chance of cure” and “very unlikely—less than 10% chance of cure”) versus all other responses (including unlikely cure [10–24% chance of cure] and likely cure [25% to >90% chance of cure]). We also asked participants to select their primary goal of cancer treatment from the following choices: “to cure my cancer,” “to lessen my suffering,” “to keep hoping,” “to make sure I have done everything,” “to extend my life,” and “to help cancer research,” and “other.”

### Statistical analyses

We calculated descriptive statistics, including means or medians for continuous variables and proportions for categorical variables, to describe demographic and clinical data. Initially, we compared the three predesignated treatment groups of endocrine therapy, first- or second-line chemotherapy, and third-line chemotherapy and beyond, but since we found no difference in QOL, depression, and anxiety between the chemotherapy treatment groups, we collapsed the two chemotherapy treatment groups into one group. We compared mean FACT-B TOI and FACT-B subscale scores between patients who were treated with endocrine therapy and those treated with chemotherapy using a *t*-test for continuous variables. We compared proportions of patients with clinically significant anxiety (HADS-Anxiety >7) and depression (HADS-Depression score >7) between these two treatment groups using Fisher’s exact test. For PTPQ items, we reported responses (proportions) to items and compared responses between patients treated with endocrine therapy to those treated with chemotherapy using a chi-square test for categorical variables.

Finally, we utilized multivariable purposeful selection linear regression modeling to explore the associations between patient-related factors and depression and anxiety

symptoms. We prespecified the inclusion of age, being married, and patients’ perception of a low likelihood of cure, regardless of their significance level into the models given their known association with depression and anxiety. Using purposeful selection, we tested the associations between the HADS-Depression score and demographic factors (white race, having children, college graduate, Catholic religion), clinical factors (time from initial breast cancer diagnosis to a diagnosis of MBC, receiving chemotherapy), FACT-B TOI score, and frequency of prognostic conversations (occurring often or very often). Covariates that were associated at a significance level of 0.1 were incorporated into the final model. Similarly, we utilized purposeful selection linear regression modeling to explore the association between patient-related factors and anxiety symptoms. For all statistical analyses, we considered a two-sided  $P < 0.05$  to be statistically significant. We used STATA software, version 9.3 for all analyses.

## Results

### Participant sample

We enrolled 81% (144/177) of consecutively eligible patients who were seen in the outpatient breast oncology clinic

TABLE 1. BASELINE CHARACTERISTICS

Variable	Endocrine therapy (n = 40)	Chemotherapy (n = 100)
Mean age (SD)	66.0 (11.3)	58.6 (11.8)
White race, n (%)	40 (100)	91 (91)
Partner status <sup>a</sup> , n (%)		
Married or with partner	16 (40)	67 (67)
Widowed	7 (17.5)	8 (8)
Never married	7 (17.5)	15 (15)
Divorced	10 (25)	9 (9)
Children <sup>a</sup>	30 (75)	74 (74)
Religion, n (%)		
Catholic	22 (55)	48 (48)
Protestant	2 (5)	7 (7)
Jewish	1 (2.5)	9 (9)
Other	11 (27.5)	19 (19)
None	4 (10)	17 (17)
Education <sup>a</sup> , n (%)		
≤ High school	11 (27.5)	17 (17)
Some college	8 (20)	24 (24)
College degree	8 (20)	32 (32)
Advanced degree	13 (32.5)	26 (26)
Hormone receptor status, n (%)		
HR positive	40 (100)	72 (72)
HR negative	0 (0)	28 (28)
HER2 receptor status, n (%)		
HER2 positive	2 (5)	41 (41)
HER2 negative	38 (95)	59 (59)
Triple negative, n (%)	0 (0)	9 (9)
Median time in months from initial to metastatic diagnosis (range)	52.9 (0–353.9)	58.5 (0–274.9)

<sup>a</sup>Denominator includes missing data: one missing response for partner status, children, and education in the chemotherapy group. SD, standard deviation.

TABLE 2. QUALITY OF LIFE AND MOOD BY TREATMENT GROUP

Variable	Endocrine therapy (n=40); mean (SD)	Chemotherapy (n=100); mean (SD)	p
FACT-B (score range, 0–148)	111.6 (18.4)	104.9 (20.0)	0.08
FACT-B TOI (score range, 0–96)	72.5 (13.1)	66.1 (15.0)	<0.01
FACT-B subscales			
Physical well-being (score range, 0–28)	23.4 (4.4)	20.4 (5.5)	<0.01
Social/family well-being (score range, 0–28)	21.7 (6.5)	22.4 (5.2)	0.54
Emotional well-being (score range, 0–24)	17.9 (3.6)	17.0 (4.6)	0.27
Functional well-being (score range, 0–28)	21.1 (5.2)	19.2 (5.6)	0.06
Breast cancer subscale (score range, 0–40)	28.0 (5.9)	26.1 (6.1)	0.09
HADS-anxiety	4.8 (3.4)	5.7 (4.1)	
HADS-anxiety >7	7/40 (17.5%)	33/100 (33%)	0.05
HADS-depression	3 (3.1)	4.5 (3.7)	
HADS-depression >7	3/40 (7.5%)	22/100 (22%)	0.03

FACT-B, Functional Assessment of Cancer Therapy-Breast; HADS, Hospital Anxiety and Depression Scale; TOI, Trial Outcome Index.

between November 19, 2013, and September 24, 2014. We excluded three participants from the final analysis because they were not being treated with endocrine therapy or chemotherapy at the time of survey completion. One participant consented to the study but did not complete the questionnaire.

Table 1 describes the characteristics of the study participants ( $n=140$ ). Participants were primarily white with a mean age of 66 in the endocrine therapy group and 58.6 in the chemotherapy group.

### QOL and psychological symptoms

Table 2 depicts mean scores for the FACT-B TOI and FACT-B subscales. Patients receiving chemotherapy reported significantly worse QOL compared to those taking endocrine therapy (FACT-B TOI; 66.1 versus 72.5,  $p<0.01$ ). Specifically, patients treated with chemotherapy had significantly lower physical well-being compared with those taking endocrine therapy (20.4 versus 23.4,  $p<0.01$ ). More patients receiving chemotherapy reported depression symptoms compared to patients taking endocrine therapy (22% versus 7.5%,  $p=0.03$ ) (Table 2). There was also a trend for higher rates of anxiety in patients receiving chemotherapy (33% versus 17.5%,  $p=0.05$ ).

### Information preferences and frequency of prognostic conversations

The majority of all study participants (71%, 99/140) expressed that they would like to hear as many details as pos-

sible related to their cancer diagnosis and treatment (Fig. 1). In addition, most participants endorsed that it was “extremely important” (54%, 76/140 patients) or “very important” (18%, 25/140) to know about their prognosis (Fig. 1). There were no differences for information preferences between patients receiving endocrine therapy or chemotherapy. About a third of patients (49/140, 35%) reported having frequent (defined as often or very often) prognostic conversations with their oncologist.

### Prognostic understanding and treatment goal

A substantial proportion of study participants (39%, 54/140) reported that their cancer was likely curable, and 31% (43/140) of participants reported that their primary treatment goal was cure (Fig. 2). There were no differences in report of likelihood of cure and primary treatment goal between patients receiving endocrine therapy or chemotherapy.

### Predictors of depression and anxiety

In multivariable purposeful linear regression modeling, age, marital status, and receipt of chemotherapy did not predict higher depression symptoms (Table 3). Higher FACT-B TOI scores were associated with lower depression symptoms ( $\beta$ ,  $-0.16$ ;  $p<0.01$ ). Although patients’ perception of a low likelihood of cure was associated with greater depression ( $\beta$ , 1.27;  $p<0.01$ ), those who reported frequent prognostic conversations with their oncologist had lower depression symptoms ( $\beta$ ,  $-1.28$ ;  $p<0.01$ ).

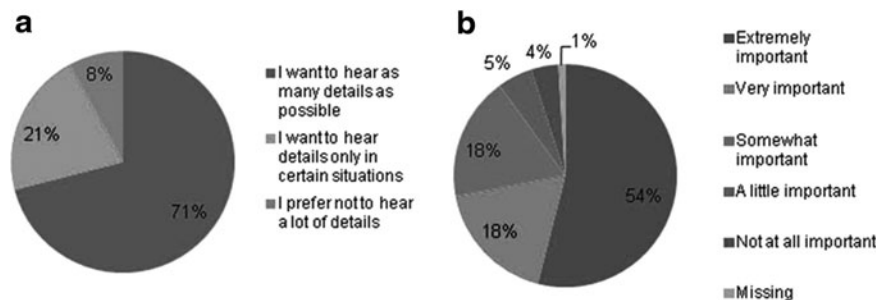
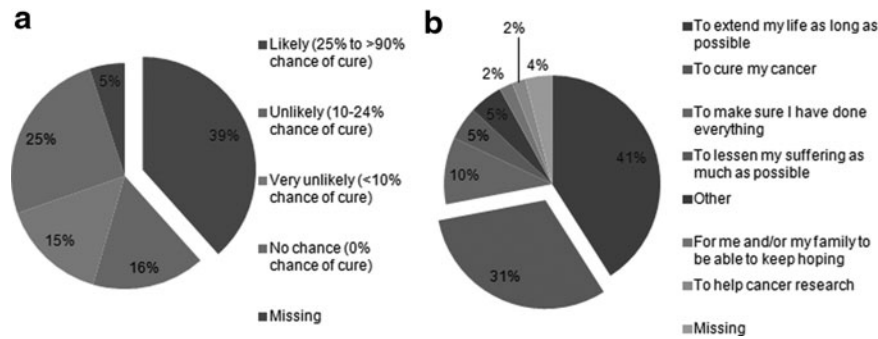


FIG. 1. Patients’ preferences for details about cancer treatment and prognosis, including (a) their preferences for details about cancer diagnosis and treatment ( $n=140$ ) and (b) the importance of knowing prognosis ( $n=140$ ).



**FIG. 2.** Patients’ prognostic understanding and primary treatment goal, including (a) their estimated likelihood that their cancer will be cured ( $n = 140$ ) and (b) their primary treatment goal ( $n = 140$ ).

In multivariable purposeful linear regression modeling, the receipt of chemotherapy and patients’ perception of a low of likelihood of cure were not associated with anxiety (Table 4). Older age ( $\beta, -2.65; p < 0.01$ ), being married ( $\beta, -1.30; p = 0.049$ ), and having children ( $\beta, -2.23; p < 0.01$ ) were associated with lower anxiety symptoms. Higher FACT-B TOI scores also predicted lower anxiety symptoms ( $\beta, -0.11; p < 0.01$ ). Catholic religion was associated with higher anxiety symptoms ( $\beta, 1.38; p = 0.02$ ).

**Discussion**

To better understand the supportive care needs of patients with MBC, we examined QOL, anxiety, depression, and perceptions of prognosis in patients with MBC, stratified by receipt of endocrine therapy or chemotherapy. Patients with MBC who are treated with chemotherapy experience worse QOL than those treated with endocrine therapy. We also found a strikingly high prevalence of psychological morbidity in patients with MBC. Patients treated with chemotherapy reported higher rates of both anxiety and depression symptoms when compared to patients treated with endocrine therapy, with almost a quarter of patients reporting clinically significant depression symptoms and a third reporting clinically significant anxiety symptoms. These rates mirror those found in patients newly diagnosed with metastatic non-small-cell lung cancer.<sup>26</sup>

Higher QOL as measured by the FACT-B TOI predicted lower depression and anxiety symptoms. Interestingly, treatment with chemotherapy was not associated with higher depression and anxiety symptoms in multivariable models. It is possible that the lower QOL in the chemotherapy group

explains the higher rates of depression and anxiety symptoms in this population, rather than the receipt of chemotherapy. This finding is significant since the FACT-B TOI measures symptoms that are modifiable and meaningful targets to patients. Our data support designing and studying interventions to improve the physical, functional, and breast cancer-related symptoms in patients with MBC. In doing so, such interventions might positively impact QOL as well as mood in patients with MBC.

While patient perception of a low likelihood of cure was associated with more depression symptoms, the report of frequent prognostic conversations with an oncologist was associated with less depression. Oncologists often voice the concern that discussions focused on prognosis may take away hope or cause despair, but it is possible that addressing prognosis frequently may actually alleviate some of the psychological distress that patients with MBC face. In addition, a report of low likelihood of cure was not associated with increased anxiety symptoms, which may provide additional reassurance to providers as they communicate prognosis openly and honestly with their patients. Moreover, most participants in this study wanted to know as many details as possible related to their diagnosis and treatment and valued knowing about their prognosis.

Despite the fact that most participants desired information about their disease and treatment and placed value in knowing prognostic information, the minority of patients reported a low likelihood of cure. Almost 40% reported that their cancer was likely curable, and almost a third of patients reported their primary treatment goal was cure. In order for a patient to weigh the benefits and burdens of a cancer therapy,

TABLE 3. PREDICTORS OF DEPRESSION SYMPTOMS

	Coefficient	SE	95% CI	p
Age >64	-0.50	0.47	-1.42, 0.43	0.29
Married	-0.46	0.47	-1.39, 0.47	0.33
Receiving chemotherapy	0.05	0.52	-0.98, 1.08	0.93
FACT-B TOI	-0.16	0.02	-0.20, -0.13	<0.01
Perception of low likelihood of cure	1.27	0.44	0.41, 2.14	<0.01
Frequent prognostic conversations	-1.28	0.47	-2.21, -0.34	<0.01

TABLE 4. PREDICTORS OF ANXIETY SYMPTOMS

	Coefficient	SE	95% CI	p
Age >64	-2.65	0.62	-3.88, -1.41	<0.01
Married	-1.30	0.65	-2.60, -0.01	0.049
Receiving chemotherapy	-0.11	0.71	-1.50, 1.29	0.88
FACT-B TOI	-0.11	0.02	-0.15, -0.07	<0.01
Perception of low likelihood of cure	-0.51	0.59	-1.68, 0.67	0.39
Children	-2.23	0.70	-3.61, -0.86	<0.01
Catholic	1.38	0.59	0.21, 2.56	0.02

she must understand the goals of treatment. Also, patients' understanding of their illness and prognosis strongly predicts treatment decision making at the end of life.<sup>14,15</sup> While patients with metastatic cancer who view themselves as terminally ill are more likely to prefer and receive symptom-directed care, those who overestimate their prognosis are more likely to choose an aggressive course of therapy.<sup>27,28</sup> A large proportion of patients in our study did not report an accurate prognostic understanding of their illness or a realistic treatment goal, and this is the first study to report this information deficit in this population of patients.

Our study has several important limitations. The sample comprised a small number of mostly white patients drawn from a single, tertiary care center. Therefore, the findings may not be generalizable to the minority groups and other care settings. We did not collect data on comorbid diseases that may affect QOL and mood. In addition, this was a cross-sectional study that does not allow us to make any causal inferences with the data or examine the symptom burden and its proximity to death.

National consensus guidelines recommend that oncologists perform a palliative care assessment for patients with metastatic solid tumors, including an assessment of symptoms, psychosocial distress, and educational and informational needs.<sup>29</sup> This study was designed to examine these supportive care needs in patients with MBC with the goal of more precisely defining particular needs and whether a subgroup of patients might have more supportive care needs. Our results suggest that patients treated with chemotherapy suffer from lower QOL when compared to those treated with endocrine therapy. Patients with MBC also experience marked depression and anxiety, which were associated with lower QOL. In addition, although patients desire information about their diagnosis and treatment and value information about prognosis, a large proportion of patients have unrealistic treatment goals and do not report an accurate understanding about their prognosis. This information gap might be addressed with more frequent prognostic conversations, and our data suggest that such conversations are not associated with anxiety and are actually predictive of less depression. Our study defines the supportive care needs for women with MBC and lays the foundation for developing empirically based interventions that target the management of symptoms, psychosocial support, and treatment decision making for the spectrum of patients with MBC and their families.

### Acknowledgments

Research support: Dr. Shin was supported by R25CA092203 from the National Cancer Institute at the National Institutes of Health. Dr. Temel was supported by a National Cancer Institute Career Development Award K24CA181253.

### Author Disclosure Statement

No competing financial interests exist.

### References

- Howlander N, Noone AM, Krapcho M, Garshell J, et al. (eds): SEER Cancer Statistics Review 1975–2012. [http://seer.cancer.gov/csr/1975\\_2012/](http://seer.cancer.gov/csr/1975_2012/). Based on November 2014 SEER data submission, posted to the SEER web site, April 2015. (Last accessed January 15, 2016.)
- Siegel RL, Miller KD, Jemal A: Cancer statistics, 2015. *CA Cancer J Clin* 2015;65:5–29.
- Meisel JL, Domchek SM, Vonderheide RH, et al.: Quality of life in long-term survivors of metastatic breast cancer. *Clin Breast Cancer* 2012;12:119–126.
- Giordano SH, Buzdar AU, Smith TL, et al.: Is breast cancer survival improving? *Cancer* 2004;100:44–52.
- Chia SK, Speers CH, D'Yachkova Y, et al.: The impact of new chemotherapeutic and hormone agents on survival in a population-based cohort of women with metastatic breast cancer. *Cancer* 2007;110:973–979.
- Caplette-Gingras A, Savard J: Depression in women with metastatic breast cancer: A review of the literature. *Palliat Support Care* 2008;6:377–387.
- Lidgren M, Wilking N, Jonsson B, et al.: Health related quality of life in different states of breast cancer. *Qual Life Res* 2007;16:1073–1081.
- Kenne Sarenmalm E, Ohlen J, Jonsson T, et al.: Coping with recurrent breast cancer: Predictors of distressing symptoms and health-related quality of life. *J Pain Symptom Manage* 2007;34:24–39.
- Reed E, Simmonds P, Haviland J, et al.: Quality of life and experience of care in women with metastatic breast cancer: A cross-sectional survey. *J Pain Symptom Manage* 2012; 43:747–758.
- Breast Cancer: NCCN Clinical Practice Guidelines in Oncology. 2016; Version 1.2016. [www.nccn.org](http://www.nccn.org) (Last accessed January 15, 2016.)
- Parker SM, Clayton JM, Hancock K, et al.: A systematic review of prognostic/end-of-life communication with adults in the advanced stages of a life-limiting illness: Patient/caregiver preferences for the content, style, and timing of information. *J Pain Symptom Manage* 2007;34:81–93.
- Hagerty RG, Butow PN, Ellis PM, et al.: Communicating with realism and hope: Incurable cancer patients' views on the disclosure of prognosis. *J Clin Oncol* 2005;23:1278–1288.
- Hagerty RG, Butow PN, Ellis PA, et al.: Cancer patient preferences for communication of prognosis in the metastatic setting. *J Clin Oncol* 2004;22:1721–1730.
- Haidet P, Hamel MB, Davis RB, et al.: Outcomes, preferences for resuscitation, and physician-patient communication among patients with metastatic colorectal cancer. SUPPORT Investigators. Study to Understand Prognoses and Preferences for Outcomes and Risks of Treatments. *Am J Med* 1998;105:222–229.
- Cosgriff JA, Pisani M, Bradley EH, et al.: The association between treatment preferences and trajectories of care at the end-of-life. *J Gen Intern Med* 2007;22:1566–1571.
- Weeks JC, Catalano PJ, Cronin A, et al.: Patients' expectations about effects of chemotherapy for advanced cancer. *N Engl J Med* 2012;367:1616–1625.
- Temel JS, Greer JA, Admane S, et al.: Longitudinal perceptions of prognosis and goals of therapy in patients with metastatic non-small-cell lung cancer: Results of a randomized study of early palliative care. *J Clin Oncol* 2011;29:2319–2326.
- Brady MJ, Cella DF, Mo F, et al.: Reliability and validity of the functional assessment of cancer therapy-breast quality-of-life instrument. *J Clin Oncol* 1997;15:974–986.
- Zigmond AS, Snaith RP: The hospital anxiety and depression scale. *Acta Psychiatr Scand* 1983;67:361–370.
- Wright AA, Zhang B, Ray A, et al.: Associations between end-of-life discussions, patient mental health, medical care

- near death, and caregiver bereavement adjustment. *JAMA* 2008;300:1665–1673.
21. Mack JW, Wolfe J, Grier HE, et al.: Communication about prognosis between parents and physicians of children with cancer: Parent preferences and the impact of prognostic information. *J Clin Oncol* 2006;24:5265–5270.
  22. Phelps AC, Maciejewski PK, Nilsson M, et al.: Religious coping and use of intensive life-prolonging care near death in patients with advanced cancer. *JAMA* 2009;301:1140–1147.
  23. Prigerson HG: Socialization to dying: Social determinants of death acknowledgement and treatment among terminally ill geriatric patients. *J Health Soc Behav* 1992;33:378–395.
  24. Ray A, Block SD, Friedlander RJ, et al.: Peaceful awareness in patients with advanced cancer. *J Palliat Med* 2006;9:1359–1368.
  25. El-Jawahri A, Traeger L, Park ER, et al.: Associations among prognostic understanding, quality of life, and mood in patients with advanced cancer. *Cancer* 2014;120:278–285.
  26. Temel JS, Greer JA, Muzikansky A, et al.: Early palliative care for patients with metastatic non-small-cell lung cancer. *N Engl J Med* 2010;363:733–742.
  27. Mack JW, Weeks JC, Wright AA, et al.: End-of-life discussions, goal attainment, and distress at the end of life: Predictors and outcomes of receipt of care consistent with preferences. *J Clin Oncol* 2010;28:1203–1208.
  28. Weeks JC, Cook EF, O'Day SJ, et al.: Relationship between cancer patients' predictions of prognosis and their treatment preferences. *JAMA* 1998;279:1709–1714.
  29. Palliative Care: NCCN Clinical Practice Guidelines in Oncology. 2016; Version 1.2016. [www.nccn.org](http://www.nccn.org) (Last accessed January 15, 2016.)

Address correspondence to:  
*Jennifer A. Shin, MD, MPH*  
*Division of Hematology and Oncology*  
*Massachusetts General Hospital*  
*Cancer Center*  
*55 Fruit Street*  
*Lawrence House 308*  
*Boston, MA 02114*

*E-mail:* [jashin@partners.org](mailto:jashin@partners.org)