Published in final edited form as:

Psychooncology. 2014 February ; 23(2): 143–150. doi:10.1002/pon.3382.

The Importance of Contextual Factors and Age in Association with Anxiety and Depression in Black Breast Cancer Patients

Vanessa B. Sheppard, PhD.,

Department of Oncology, Georgetown University Medical Center

Felicity W. K. Harper, Ph.D.,

Wayne State University School of Medicine/Karmanos Cancer Center

Kimberly Davis, Ph.D.,

Medstar Georgetown University Hospital

Fikru Hirpa, MA, and

Cancer Prevention and Control Program, Georgetown University

Kepher Makambi, PhD.

Department of Biostatistics, Georgetown University

Abstract

Objectives—Limited research exists on correlates of psychosocial distress in Black breast cancer patients. The goals of the study were to describe the prevalence of distress (anxiety and depression) in Black women with breast cancer and to examine the influence of demographic, clinical, contextual (e.g. self-efficacy, medical mistrust), and process of care factors (e.g., patient satisfaction) on women's level of anxiety and depression.

Methods—Eighty-two Black women diagnosed with invasive non- metastatic breast cancer were interviewed by phone. Collected data included demographics, clinical, contextual, and process of care factors. Bivariate correlations were used to examine relationships between those variables. Multiple linear regressions were used to examine predictors of anxiety and depression.

Results—About one-third of the women (32%) met cut-off thresholds for distress. Medical mistrust and positive attitude had significant influences on anxiety levels while age and positive attitude were determinants of levels of depression. Participants with higher medical mistrust reported more anxiety ($r=.379$; $p<.001$) and depression ($r=.337$ $p=.002$) while women with higher self-efficacy reported less anxiety ($r=-.401$; $p<.001$) and depression ($r=-.427$; $p<.001$). Age was inversely related to both anxiety and depression ($r=-.224$, $r=-.296$, respectively; $p<.05$).

Conclusions—Findings support national recommendations for routine distress screening in the delivery of cancer care particularly in younger Black patients. Interventions targeted to boost self-efficacy or reduce medical mistrust through enhanced patient-provider interactions may decrease psychological distress. Psychosocial needs of younger patients warrant particular attention.

Introduction

In 2011, an estimated 226,870 women were diagnosed with invasive breast cancer [1]. Previous research suggests 30%–50% of these women will experience some psychosocial distress during the course of their breast cancer diagnosis and/or treatment [2–6]. While most patients will regain normal levels of psychological health over time, a substantial number will experience longer-term effects and potentially disabling psychological morbidity [7–10].

As the first line of clinical support for women at the time of diagnosis, oncology providers have a critical role in the screening and referral of psychological morbidity in breast cancer patients. In 1999, the National Comprehensive Cancer Network (NCCN) recommended that oncologists assess psychological distress but assessment has still not been integrated into the routine delivery of cancer care [11]. Recently, the American College of Surgeons mandated that all cancer centers conduct routine distress screening by 2015 [12].

Distress, according to the NCCN guidelines, is “an unpleasant experience of an emotional, psychological, social, or spiritual nature that interferes with the ability to cope with cancer treatment” [11] (p.114). Anxiety and depression are common components of “distress” experienced by cancer patients [13]. Previous data suggest that for breast cancer patients, the prevalence of depression and/or anxiety in the year after diagnosis is approximately twice that of the general female population [8]. Rates of distress in black breast cancer patients range from 25% to 35% [14, 15] though reliability of estimates is lacking because studies have tended to have small black samples. [15–17], use of different measurements (e.g. [14, 15, 17–21]), often report means vs. rates [19–21], or report general rates not specified by race [14, 15, 18]. Thus, ethnic variations in distress levels are equivocal, as some studies suggest that compared to Whites, Black women have higher emotional well-being, positive growth [14, 20, 22, 23] and lower levels of distress [16, 17] while others found no differences in distress levels [14, 15, 24]. One explanation may be that most studies have not included contextual factors. Burgees and colleagues (2005) [8] emphasize the importance of context in understanding factors that may be correlated with higher psychological distress in breast cancer patients. Few studies have included contextual variables relevant to black women (e.g., religiosity collectivism, medical mistrust) [24, 25].

Research with low-income ethnic minority breast cancer patients suggests that most depressed women do not receive medication or counseling [15] and they report a greater need for informational, practical, supportive, and spiritual needs compared to non-Hispanic Whites [25]. A Black worldview (Afrocentric perspective) and identity are characterized by values of spirituality, communalism, interdependence, or collective responsibility [26, 27]. Ethnic identity and experiences of racism have also been linked to health perceptions [23, 28].

The PEN-3 Health Behavioral and Cultural Model provides a useful framework to understand contextual factors that may be related to distress in Black breast cancer patients. Specifically, PEN-3 includes domains of cultural identity (e.g., Afrocentric views), relationships and expectations (e.g., collectivism), and cultural empowerment (e.g.,

confidence in participating in their healthcare) and has been used to develop culturally sensitive interventions [29, 30]. This is because black identity is not a unitary construct, as identity is internalized to different degrees having a differential impact on self-efficacy and self-esteem [31]. Bowen et al. (1998) found that ethnic identity moderated the impact of a screening intervention aimed to reduce cancer worry [23]. Thus, ethnic identity may shape the experience of distress in Black breast cancer patients.

Medical mistrust (i.e., suspicion of the treatment provided to an individual's racial or ethnic group by mainstream health care systems and health professionals) [32] is an example of a contextual factor that may be relevant to the psychological adjustment of Black patients; higher medical mistrust has been associated with several breast cancer behaviors (e.g., non-adherence to screening recommendations [32], lower participation in genetic services for BRCA1/2 mutations [33], and fewer uptakes of adjuvant breast cancer treatments [34]). To date, we are not aware of studies that have examined the relationship between medical mistrust and psychological distress in newly diagnosed breast cancer patients. Interactions with the healthcare system (e.g., ratings of quality of care) are also likely to impact levels of anxiety given the important role of providers in helping women to cope and adjust to diagnosis and treatment but this has been understudied in Black patients [35]. The present study overcomes previous gaps in knowledge by focusing solely on breast cancer patients and including several contextual factors that may represent cultural strengths protective factors and/or risk factors of newly diagnosed Black breast cancer patients. Specific aims were to identify contextual and healthcare process of care factors that were correlated with anxiety and depression levels in newly diagnosed in black breast cancer patients to assist providers in identifying and addressing women with the greatest need.

Methods

Participants and Setting

Eligible women were those who self-identified as African American/Black, within 20 weeks of their definitive surgery, diagnosed with invasive non-metastatic breast cancer, at least 21-years-old, and able to read/understand English. Potential participants were identified from surgery appointment logs and pathology reports or identified by clinical staff. A total of 99 women were screened for this project between March 2010 and March 2011 from sites in Washington, DC, and Detroit, Michigan. Of those screened, 15 were ineligible (e.g. beyond the 20-weeks interview window, had recurrence, self-identity with a race other than Black or White) and 2 declined participation. Eighty-two (83%) Black women agreed to participate. All study procedures were approved by local university and hospital Institutional Review Boards. Trained research or clinical staff approached women to invite them to participate. Among patients who were interested staff obtained consent for study participation. All women received \$25 American Express Gift cards for their participation.

Measures

Patients self-reported data on distress, contextual, and process of care factors. Clinical data were abstracted from medical records.

Distress—Symptoms of *anxiety* and *depression* were measured using the Hospital Anxiety and Depression Scale (HADS) [36]. This 14-item self-report measure was designed for use with patients with physical illness and provides subscale scores for depression and anxiety. The HADS has demonstrated good overall reliability and validity. Cronbach's alpha for HADS-A has been shown to range from .68 to .93 (mean=.83) and for the HADS-D from .67 to .90 (mean=.82) [37]. Cronbach's alphas in the current study were 0.78 and 0.77 for anxiety and depression, respectively.

Demographic variables—Demographic questions included age, education, relationship status (i.e., married/partnered or single), employment status, and health insurance status. Insurance status was recorded as insured with any private insurance or those with publicly subsidized insurance; only one woman was uninsured. We linked participants' residence zip code to the 2010 census tract data to gather information about the percentage of women living below the poverty line and minority percentages.

Clinical factors—Clinical characteristics included pathological stage (I–III), surgery type (lumpectomy or mastectomy), and hormonal receptor status (positive or negative).

Contextual factors—We used two subscales from the Communication Attitudinal Self-Efficacy Scale (CASE) [38] to assess women's *self-efficacy* (i.e., level of confidence) in “maintaining a positive attitude” (alpha=.77) during their cancer treatment (e.g., “I won't let cancer get me down”) and in “understanding and participating in their care” (alpha=.76) with their providers (e.g., “It is easy for me to actively participate in decisions about my treatment”) [38]. Cronbach's alphas in our study were .88 for positive attitude and .72 for participating in care. We administered the Suspicion Subscale from the Group-Based Medical Mistrust Scale (GBMMS) [32, 39] to evaluate patients' beliefs about whether people of the same ethnic group should be cautious about the information they provide to healthcare workers (alpha=.76). We used nine items from Lukwago and colleagues to assess religiosity (e.g., “I talk openly about my faith”) and six items to evaluate collectivism (“your family would turn to each other in times of trouble” (alpha = .88, alpha = .93 respectively). Higher scores indicate higher religiosity and higher collectivism [40]. We administered ten items from Kelsey & Ransom (1996) [41] world-view opinionnaire to examine participants endorsement of Afro-Centric (e.g. cooperation) vs. Euro-centric (e.g. uniqueness) statements (yes vs. no).

Process of care factors—Healthcare barriers were evaluated using 11 items that assessed whether participants faced problems seeking healthcare (yes vs. no) (e.g. finding a doctor, childcare). A total barrier score was created for each woman from the sum of all items endorsed as barriers. We used three subscales from the Patient Satisfaction Questionnaire (PSQ18) [42]. The Communication Subscale assessed perceptions of the interpersonal and communication skills of the provider (alpha=.64). The Technical Quality Subscale evaluated perceptions about the technical aspects of the medical care provided to the patient (alpha=.74). The Accessibility and Convenience Subscale measured the availability and ease of access to medical services provided to the patient (alpha =.75).

Statistical Analysis

First, bivariate correlations were used to examine relationships between demographic, clinical, contextual, process of care, and distress (depression and anxiety) variables. Second, multiple linear regression was used to examine predictors of anxiety and depression scores. Predictor variables that were significant ($\alpha=.05$) in the bivariate analysis were entered into the models in three blocks. The first block included demographic characteristics, block 2 included contextual characteristics, and block 3 included process of care factors.

Results

Characteristics of the study sample are displayed in Table 1. About 55% of study participants had at least a high school education, 24% were employed full-time, almost all had some health insurance, about 83% were cancer stage I or II, and the majority of women (63%) had breast conserving surgery (lumpectomy). Participants scored high on the measures related to Black identity including spirituality, collectivism, and Afro-centric perception of the world (see Table 1). Eighty-percent of women reported at least one barrier to care and physical issues (50%), emotional feelings (40%), and money concerns (40%) were the most frequently endorsed barriers (see Figure 1).

Mean scores for anxiety and depression were 5.7 (range: 0–18; $SD=3.7$) and 5.0 (range: 0–16; $SD=3.7$), respectively. Most participants had normal scores for anxiety and depression, 74% and 79%, respectively. More than one-in-ten participants (12.2%) had anxiety scores from 11–21 suggesting clinically significant levels of anxiety and 13% were within the cut-off for borderline anxiety levels (8 to 10). Ten percent of the participants had scores ranging from 11–21 on the depression scale suggesting significant depression levels and 11% were within the borderline range (8 to 10). Overall, about one-third had either depression or anxiety levels that were at border line or caseness of clinical distress.

Factors Influencing Anxiety and Depression

As shown in Table 2, lower levels of anxiety were significantly associated with older age ($r = -.224, p=.043$), positive attitude during treatment ($r = -.401, p=.001$), and participating in care ($r = -.228, p=.040$). Levels of anxiety were also lower among women with higher ratings of provider's technical quality ($r=-.295, p=.007$) and better communication with their provider ($r=-.255, p=.021$). In contrast, women with higher medical mistrust ($r=.417, p<.001$) and women with more barriers to care ($r=.309, p=.005$) tended to have higher levels of anxiety.

Depression levels, likewise, were negatively related to women's age ($r=-.296, p=.007$), higher self-efficacy for participating in their care ($r=-.333, p=.002$), and maintaining a positive attitude during treatment ($r=-.370, p=.001$). Depression was lower in women with higher ratings of technical quality of care ($r=-.354, p=.001$), better communication with providers ($r=-.309, p=.005$), and better convenience of care ($r=-.228, p=.039$). As with anxiety, women reporting more barriers to care ($r=.440, p<.001$) and higher medical mistrust ($r=.337, p <.002$) also had higher levels of depression. All bivariate correlations for depression or anxiety levels were not significant for clinical factors.

Further analysis showed (data not shown) that women age 50 or less (compared to those older than 50) had higher depression levels that suggest borderline or caseness of psychological morbidity (32.3% vs. 13.7%; $p=.045$). However, difference in anxiety levels for the two groups was not significant (35.5% vs. 19.6%; $p=.110$). A deeper analysis of the various socioeconomic groups shows that borderline or caseness in depression levels were more relevant among women age 50 whom education level was utmost high school ($p=.029$), or who were insured by non-private insurance ($p=.007$) or who were not fulltime employed ($p=.048$). Borderline or caseness anxiety levels were also higher among women age 50 who were insured by non-private companies ($p=.034$). There was no association between living in areas with higher poverty and distress outcomes ($p > .05$).

Significant factors ($<.05$) were entered into multivariable models. As shown in Table 3, multivariable linear regression models were sequentially fit to three sets of predictors associated with anxiety and depression. Results showed that age was a significant predictor of anxiety and depression and was inversely associated with both outcomes. Contextual predictors were entered into the model in block 2. These variables together explained an additional 22% of the variance in anxiety score (R^2 change= .223, $p<.001$) and depression scores (R^2 change= .218, $p<.001$). Positive attitude and medical mistrust were significantly related to anxiety and depression levels.

After adding in process of care factors in the third, model variables accounted for 32% of the variation in anxiety scores and 39% of the variation in depression scores. The R^2 change attributable to process of care factors was 4.4% ($p=.196$) for anxiety and 8.0% for depression ($p=.0598$). Participants confidence in maintaining a positive attitude was the only significant common predictor of anxiety ($p=.029$) and depression ($p=.015$). Medical mistrust was also a significant predictor of anxiety levels. Positive attitude ($p=.028$) and age ($p=.028$) remained significant predictors of depression. Once process of care factors were considered, age became marginally related to anxiety and medical mistrust became non-significant in predicting depression.

Discussion

This study expands existing scientific knowledge about levels of distress in newly diagnosed black breast cancer patients. We found that a substantial percentage of Black women (32%) with breast cancer experience distress levels that would warrant further distress screening evaluation in accordance with HADS cut-off scores [36]. This rate is similar to those in previous studies, which have reported distress in about one-third of breast cancer patients [5, 15, 43]. One novel component of this study is its focus solely on Black patients and the inclusion of previously understudied contextual factors such as self-efficacy and medical mistrust. Women with higher medical mistrust reported more anxiety and depression and women with higher self-efficacy (i.e., more confidence in their ability to maintain a positive attitude in coping with their diagnosis/treatment) reported less anxiety and depression. Self-reported barriers to care and process of care factors (e.g., communication, etc.) were significant in bivariate analysis but became insignificant in multivariable models suggesting that attention to contextual factors may be relevant and important to address in this subgroup. Furthermore, clinical factors (e.g., prognosis, stage) did not impact the risk of

distress [8, 15, 44–47]. However, a case control study of risk for psychological distress specifically in Black patients found that stage of disease increased women's psychological distress [19]

Collectively, our findings point to several opportunities for oncologists to identify and address the psychological needs of newly diagnosed black patients. One proximal implication of our findings is the need for interventions that focus on early risk assessment and facilitating identification of at-risk patients by oncologists. Linkages with trained mental health professionals (i.e., social workers, psychologists, etc.) will be important to facilitate this process. Such coordination may facilitate referrals for psychosocial interventions that address distress (e.g., relaxation techniques, supportive expressive group therapy, cognitive and behavioral therapy, social support groups, and mind-body based stress reduction (MBSR) for women in need [48–51]. To date most interventions have been conducted with upper-middle class White women with breast cancer [52].

Domains from the PEN-3 model provide a useful cultural context for ethnic identify variables that have been widely endorsed in Black Americans (e.g., collectivism, Afrocentric values, etc.) [16, 17]. In our sample, these values were highly endorsed by participants but they were not significant in multivariable models. Rather than having a direct effect on outcomes, contextual factors such as collectivism (that was significant in bivariate analysis) may serve as mediators or moderators of anxiety or depression. Contextual factors such as spirituality and collectivism have been successfully integrated into interventions to improve self-efficacy regarding treatment decisions and communication with providers in newly diagnosed Black papers [29, 30, 53]

A strong patient-provider relationship after diagnosis may help reduce distress in Black patients with higher levels of medical mistrust. Previous research by O'Malley, Sheppard and colleagues [54] has shown that regardless of trust in the general medical system, Black women's trust in providers was the most salient predictor of their healthcare use. Patients also rated receiving emotional and informational support from oncology providers as desirable. It is possible that women with higher medical mistrust may experience more anxiety when put in the position of having to rely on the healthcare system because of a life threatening disease such as cancer [55]. Positive patient-provider communication and higher levels of patient-centered care are practical approaches to improve patients' interactions with their providers and perhaps may help to reduce mistrust, and therefore, reduce anxiety. This assertion is supported by data from our post hoc analysis that showed that medical mistrust was associated with both self-efficacy in maintaining a positive attitude and participating in care.

In a longitudinal study, Burgees and colleagues found that risk factors for distress in white breast cancer patients were similar to those in the general female population and included younger age, previous psychological problems, and lack of social support [8]. Our finding that age was inversely related to distress underscores the importance of identifying and addressing the psychosocial needs of younger patients particularly because Black women are more likely to have an earlier age of onset of breast cancer compared to White women [56]. These findings contradict some studies that have found no association between age and

mental health status (e.g. [24]) yet support previous research in primarily non-Black samples showing that younger (premenopausal) patients may need more support during diagnosis compared to older women [14, 15, 57]. For example, in a study [57] of 731 Australian breast cancer survivors, higher levels of anxiety (as determined by the HADS) were related to younger age in women. In fact, when compared with the oldest age group (55–60 years), women who were <35 years were at a slightly increased risk of having a possible anxiety disorder. Though there is limited empirical information about breast cancer in younger Black women, younger women may have more concerns about taking care of their children, future child-bearing and sexuality than their older counterparts [58, 59]. Clearly, more information is needed about the particular problems and/or concerns of younger Black breast cancer patients as well as interventions to address these issues.

Using domains from the PEN-3 model, study offer insight regarding a number of the factors that may impact the experience of distress in Black breast cancer patients. This understanding can be used to identify women at increased risk for distress, and refer them to appropriate psychosocial resources. However, several limitations should be noted. First, the study design used a single assessment of distress (anxiety and depression), which precludes our ability to determine causation. Future longitudinal studies with multiple assessments of distress over time will likely be important in identifying causal relationships between contextual factors and psychological morbidity as well as factors predicting changes in distress levels in this group. Additionally, future research should also examine the impact of other contextual factors not measured in this study such as locus of control. Finally, we included women with invasive non-metastatic disease so findings may not be representative of women with ductal carcinoma in situ (DCIS) or metastatic breast cancer. Examining distress in these groups is important as well to help identify similarities and differences across different stages of disease.

Despite these limitations, this study had a number of strengths. First, given that most previous studies have focused on exclusively or largely White samples of breast cancer patients, this study of Black breast cancer patients adds important understanding about this risk for distress in this group. Second, the study used a validated brief assessment of anxiety and depression, the HADS, which has been used extensively in the past as an indicator of psychological morbidity [60]. The utility of this scale rests not only in low participant burden, but also its concordance with clinical ratings and consistency of the factor structure across studies [60]. To our knowledge, this is the first study to support its reliability in Black breast cancer patients. Additional studies are needed to ascertain the most appropriate cut-offs for morbidity in Black women.

Conclusions

A substantial proportion of Black breast cancer patients have levels of psychological distress that warrant attention. Strong partnerships with oncologists may reduce anxiety and depression. However, younger women may need differential support than their older counterparts. Given the lack of empirical interventions, implementation of routine distress screening for all cancer patients presents an excellent opportunity to begin to more fully identify and meet the needs of Black women with breast cancer.

Acknowledgments

This work was funded in part by grants from the American Cancer Society (Sheppard: PI MRSMT-06-132 CPPB), the NIH Health Disparities Loan Repayment Award 2L60MD000291-02, and a NIH/NCI grant (Sheppard: PI, R01CA154848)

References

1. American Cancer Society. Cancer Facts and Figures 2012. American Cancer Society; Atlanta: GA: 2012.
2. Kissane DW, Clarke DM, Ikin J, Bloch S, Smith GC, Vitetta L, McKenzie DP. Psychological morbidity and quality of life in Australian women with early-stage breast cancer: a cross-sectional survey. *Med J Aust*. 1998; 169:192–6. [PubMed: 9734576]
3. Hewitt, ME.; Herdman, R.; Holland, JC. Meeting Psychosocial Needs of Women With Breast Cancer. National Academies Press; 2004.
4. Derogatis LR, Morrow GR, Fetting J, Penman D, Piasetsky S, Schmale AM, Henrichs M, Carnicke CL Jr. The prevalence of psychiatric disorders among cancer patients. *JAMA*. 1983; 249:751–7. [PubMed: 6823028]
5. Fallowfield LLJ. Psychological outcomes of different treatment policies in women with early breast cancer outside a clinical trial. 1990; 301:575–80.
6. Grabsch B. Psychological morbidity and quality of life in women with advanced breast cancer: a cross-sectional survey. 2006; 4:47.
7. Harrison J, Maguire P. Predictors of psychiatric morbidity in cancer patients. *Br J Psychiatry*. 1994; 165:593–8. [PubMed: 7866674]
8. Burgess CC. Depression and anxiety in women with early breast cancer: five year observational cohort study. 2005; 330:702–0.
9. Reich MM. Depression, quality of life and breast cancer: a review of the literature. *Breast Cancer Res Treat*. 2008; 110:9–17. [PubMed: 17674188]
10. Fann JR, Thomas-Rich AM, Katon WJ, Cowley D, Pepping M, McGregor BA, Gralow J. Major depression after breast cancer: a review of epidemiology and treatment. *Gen Hosp Psychiatry*. 2008; 30:112–26. [PubMed: 18291293]
11. NCCN. Practice guidelines for the management of psychosocial distress. National Comprehensive Cancer Network. 1999; 13:113–47.
12. American College of Surgeons. Cancer Program Standards 2012: Ensuring Patient-Centered Care. Commission on Cancer. 2012:1.
13. National Cancer Institute B. National Cancer Institute: PDQ® Adjustment to Cancer. Jun 14.2012 2012
14. Giedzinska AS, Meyerowitz BE, Ganz PA, Rowland JH. Health-related quality of life in a multiethnic sample of breast cancer survivors. *Ann Behav Med*. 2004; 28:39–51.10.1207/s15324796abm2801_6 [PubMed: 15249258]
15. Ell KK. Depression, Correlates of Depression, and Receipt of Depression Care Among Low-Income Women With Breast or Gynecologic Cancer. 2005; 23:3052–60.
16. Culver JL, Arena PL, Antoni MH, Carver CS. Coping and distress among women under treatment for early stage breast cancer: Comparing African Americans, Hispanics and non-Hispanic whites. *Psychooncology*. 2002; 11:495–504. [PubMed: 12476431]
17. Spencer SM, Lehman JM, Wynings C, Arena P, Carver CS, Antoni MH, Derhagopian RP, Ironson G, Love N. Concerns about breast cancer and relations to psychosocial well-being in a multiethnic sample of early-stage patients. *Health Psychol*. 1999; 18:159–68. [PubMed: 10194051]
18. Deshields T, Tibbs T, Fan MY, Taylor M. Differences in patterns of depression after treatment for breast cancer. *Psychooncology*. 2006; 15:398–406. [PubMed: 16100708]
19. Sheppard VB, Llanos AA, Hurtado de Mendoza A, Taylor T, Adams-Campbell LL. Correlates of depressive symptomatology in African American breast cancer patients. *J Cancer Surviv*. 2013

20. Janz NK, Mujahid MS, Hawley ST, Griggs JJ, Alderman A, Hamilton AS, Graff J, Katz SJ. Racial/ethnic differences in quality of life after diagnosis of breast cancer. *J Cancer Surviv.* 2009; 3:212–22.10.1007/s11764-009-0097-y [PubMed: 19760151]
21. Von Ah DM, Russell KM, Carpenter J, Monahan PO, Qianqian Z, Tallman E, Ziner KW, Storniolo AM, Miller KD, Giesler RB, Haase J, Otte J, Champion VL. Health-related quality of life of African American breast cancer survivors compared with healthy African American women. *Cancer Nurs.* 2012; 35:337–46.10.1097/NCC.0b013e3182393de3 [PubMed: 22228394]
22. Russell KM, Von Ah DM, Giesler RB, Storniolo AM, Haase JE. Quality of life of African American breast cancer survivors: how much do we know? *Cancer Nurs.* 2008; 31:E36–45. [PubMed: 18987506]
23. Bowen DJ, Christensen CL, Powers D, Graves DR, Anderson C. Effects of Counseling and Ethnic Identity on Perceived Risk and Cancer Worry in African American Women. *JCO.* 1998; 5:365–379.
24. Maly RC, Umezawa Y, Leake B, Silliman RA. Mental health outcomes in older women with breast cancer: impact of perceived family support and adjustment. *Psychooncology.* 2005; 14:535–45. [PubMed: 15493064]
25. Moadel AB, Morgan C, Dutcher J. Psychosocial needs assessment among an underserved, ethnically diverse cancer patient population. *Cancer.* 2007; 109:446–54.10.1002/cncr.22357 [PubMed: 17123273]
26. Boykin A, Jagers R, Ellison C, Albury A. Communalism: conceptualization and measurement of an Afrocultural social orientation. *J Black Stud.* 1997; 27:409–18.
27. Kelsey R, Ransom R, Jones R. World View Oppinionnaire. *Handbook of Tests and Measurements for Black Populations.* 1996; 2:37–46.
28. Pieterse AL, Carter RT. An exploratory investigation of the relationship between racism, racial identity, perceptions of health, and health locus of control among black American women. *J Health Care Poor Underserved.* 2010; 21:334–48.10.1353/hpu.0.0244 [PubMed: 20173273]
29. Sheppard VB, Williams KP, Harrison TM, Jennings Y, Lucas W, Stephen J, Robinson D, Mandelblatt JS, Taylor KL. Development of decision-support intervention for Black women with breast cancer. *Psychooncology.* 2010; 19:62–70. [PubMed: 19267384]
30. Sheppard VB, Wallington SF, Willey SC, Hampton RM, Lucas W, Jennings Y, Horton S, Muzeck N, Cocilovo C, Isaacs C. A Peer-Led Decision Support Intervention Improves Decision Outcomes in Black Women with Breast Cancer. *J Cancer Educ.* 2013.10.1007/s13187-013-0459-z
31. Collins KW, Lightsey OR. Racial identity, generalized self-efficacy, and self-esteem: A pilot study of a mediation model for african american women. *Journal of Black Psychology.* 2001; 27:272.
32. Thompson HS, Valdimarsdottir HB, Winkel G, Jandorf L, Redd W. The Group-Based Medical Mistrust Scale: psychometric properties and association with breast cancer screening. *Prev Med.* 2004; 38:209–18. [PubMed: 14715214]
33. Sheppard, VB.; Mays, D.; LaVeist, T.; Tercyak, KP. Medical influences black women's level of engagement in BRCA1/2 genetic counseling and testing. In press
34. Bickell NA, Weidmann J, Fei K, Lin JJ, Leventhal H. Underuse of Breast Cancer Adjuvant Treatment: Patient Knowledge, Beliefs, and Medical Mistrust. *J Clin Oncol.* 2009; 27:5160–5167. [PubMed: 19770368]
35. Roberts CCS. Influence of physician communication on newly diagnosed breast patients' psychologic adjustment and decision-making. *Cancer.* 1994; 74:336–41. [PubMed: 8004605]
36. Zigmond AS, Snaith RP. The Hospital Anxiety and Depression Scale. *Acta Psychiatrica Scandinavica.* 1983; 67:361–70. [PubMed: 6880820]
37. Bjelland I. The validity of the Hospital Anxiety and Depression Scale-An updated literature review. *J Psychosom Res.* 2002; 52:69. [PubMed: 11832252]
38. Wolf MMS. Development and validation of the Communication and Attitudinal Self-Efficacy scale for cancer (CASE-cancer). *Patient Educ Couns.* 2005; 57:333–41. [PubMed: 15893217]
39. Thompson HHS. The Group-Based Medical Mistrust Scale: psychometric properties and association with breast cancer screening. *Prev Med.* 2004; 38:209–18. [PubMed: 14715214]

40. Lukwago SN, Kreuter MW, Bucholtz DC, Holt CL, Clark EM. Development and validation of brief scales to measure collectivism, religiosity, racial pride, and time orientation in urban African American women. *Fam Community Health*. 2001; 24:63–71. [PubMed: 11563945]
41. Kelsey, RC.; Ransom, RM. *Handbook of Tests and Measurements for the Black Population*. Cobb & Henry Publishers; Hampton, Va: 1996. A comparison of African and European groups utilizing a worldview opinion questionnaire.
42. Marshall, GN.; Hays, RD. The patient satisfaction questionnaire short-form (PSQ-18), P-7865. 1994.
43. Morasso GG. Predicting mood disorders in breast cancer patients. 2001; 37:216–23.
44. Burgess CCCC. Does the method of detection of breast cancer affect subsequent psychiatric morbidity? 2002; 38:1622–5.
45. Kiebert. The impact of breast-conserving treatment and mastectomy on the quality of life of early-stage breast cancer patients: a review. *Journal of Clinical Oncology*. 1991; 9:1059. [PubMed: 2033420]
46. Lee MMS. Mastectomy or conservation for early breast cancer: Psychological morbidity. 1992; 28:1340–4.
47. Hughson AV. Psychological impact of adjuvant chemotherapy in the first two years after mastectomy. *Br Med J (Clin Res Ed)*. 1986; 293:1268.
48. Montazeri AA. Anxiety and depression in breast cancer patients before and after participation in a cancer support group. *Patient Educ Couns*. 2001; 45:195–8. [PubMed: 11722855]
49. Antoni MH, Lehman JM, Kilbourn KM, Boyers AE, Culver JL, Alferi SM, Yount SE, McGregor BA, Arena PL, Harris SD, Price AA, Carver CS. Cognitive-behavioral stress management intervention decreases the prevalence of depression and enhances benefit finding among women under treatment for early-stage breast cancer. *Health Psychol*. 2001; 20:20–32. [PubMed: 11199062]
50. Arving CC. Satisfaction, utilization and perceived benefit of individual psychosocial support for breast cancer patients—A randomised study of nurse versus psychologist interventions. *Patient Educ Couns*. 2006; 62:235–43. [PubMed: 16500071]
51. Kissane DDW. Supportive-expressive group therapy for women with metastatic breast cancer: survival and psychosocial outcome from a randomized controlled trial. 2007; 16:277–86.
52. Meyer TTJ. Effects of psychosocial interventions with adult cancer patients: A meta-analysis of randomized experiments. 1995; 14:101–8.
53. Carson JW, Carson KM, Porter LS, Keefe FJ, Shaw H, Miller JM. Yoga for Women with Metastatic Breast Cancer: Results from a Pilot Study. *J Pain Symptom Manage*. Mar.2007 33:331–41. [PubMed: 17349503]
54. O'Malley AS, Sheppard VB, Schwartz M, Mandelblatt J. The role of trust in use of preventive services among low-income African-American women. *Prev Med*. 2004; 38:777–85. [PubMed: 15193898]
55. LaVeist TA, Nickerson KJ, Bowie JV. Attitudes about racism, medical mistrust, and satisfaction with care among African American and white cardiac patients. *Med Care Res Rev*. 2000; 57(Suppl 1):146–61. [PubMed: 11092161]
56. Shavers VL, Harlan LC, Stevens JL. Racial/ethnic variation in clinical presentation, treatment, and survival among breast cancer patients under age 35. *Cancer*. 2003; 97:134–47. [PubMed: 12491515]
57. Osborne RHRH. Age-specific norms and determinants of anxiety and depression in 731 women with breast cancer recruited through a population-based cancer registry. 2003; 39:755–62.
58. Siegel KDK. Age-Related Distress Among Young Women with Breast Cancer. *J Psychosoc Oncol*. 1999; 17:1–20.
59. Connell SS. Issues and concerns of young Australian women with breast cancer. 2006; 14:419–26.
60. Herrmann CC. International experiences with the Hospital Anxiety and Depression Scale-A review of validation data and clinical results. *J Psychosom Res*. 1997; 42:17–41. [PubMed: 9055211]

Figure 1.
Frequency of Participant's Endorsement of Healthcare Barriers

Table 1

Characteristics of Newly Diagnosed Black Breast Cancer Patients, N=82

Demographic and SES Characteristics	<i>n</i>(%); <i>Mean</i> (<i>sd</i>)[§]
Age	53.7(11.1)
Education	
HS	37(45.1)
HS+	45(54.9)
Marital Status	
Married/Living as Married	62(76.5)
Currently Single	19(23.5)
Employment	
Full Time Employed	20(24.4)
Other [†]	62(75.6)
Health Insurance	
Private	40(49.4)
Other [‡]	41(50.6)
SES Variables	
Percent below Poverty Line	17.8 (14.8)
Percent of minority residents	74.9 (29.7)
Clinical Characteristics	
Stage	
I	32(40.5)
II	34(43.0)
III	13(16.5)
Surgery	
Mastectomy	29(37.2)
Lumpectomy	49(62.8)
HR Status	
HR positive	44(53.7)
HR Negative	23(28.0)
Unknown	15(18.3)
Contextual Factors	
Positive Attitude	14.8(2.0)
Understand/Participate in Care	14.9(2.0)
Medical mistrust	12.8(3.6)
Discrimination (0–7)	1.3(2.1)
Religiosity (20–36)	31.2(4.4)
Collectivism (13–22)	21.0(3.0)
Afrocentric Worldview (1–10)	7.5(1.9)
Process of Care Factors	
Healthcare barriers	1.9(1.6)
Communication	4.1(0.7)

Demographic and SES Characteristics	<i>n</i>(%); <i>Mean</i> (<i>sd</i>)[§]
Technical quality	4.0(0.7)
Accessibility/convenience	4.0(0.5)
Anxiety score	
Normal (0–7)	61(74.4)
Borderline (8–10)	11(13.4)
Case of psychological morbidity (11–21)	10(12.2)
Overall scale, range 0–18 (mean, SD)	5.7(3.7)
Depression score	
Normal (0–7)	65(79.3)
Borderline (8–10)	9(11.0)
Case of psychological morbidity (11–21)	8(9.8)
Overall scale, range 0–16 (mean, SD)	5.0(3.7)

[§]Data are presented as mean (standard deviation) for scale variables and as number (%) for categorical variables.

[†]Includes part-time workers, retired, students and those who never worked.

[‡]Other insurance includes Medicaid and other publicly subsidized insurance.

Table 2

Correlations between Demographic, Clinical, Socio-Cultural, and Process of Care Factors and Anxiety and Depression in Black women with Breast Cancer (N=82)

	Anxiety	Depression
<u>Demographics and SES</u>		
Age	-.224(.043)	-.296(.007)
Education (>HS vs HS)	-.152(.173)	-.171(.124)
Marital Status (Married vs. Single)	.111(.323)	.020(.861)
Full Time Employed vs Other)	-.101(.368)	-.015(.892)
Private vs Medicaid/Public	-.199(.075)	-.139(.217)
Percent below Poverty Line	.166 (.145)	.19 (.388)
Percentage of Minority Residents	-.009 (.940)	.05 (.654)
<u>Clinical Characteristics</u>		
Stage (III vs. Stage I–II)	-.094(.408)	-.090(.429)
Surgery (Mastectomy vs. Lumpectomy)	-.007(.952)	-.030(.796)
HR Status (HR Positive vs. HR negative)	-.112(.368)	-.167(.178)
<u>Contextual Factors</u>		
Positive Attitude	-.401(<.001)	-.427(<.001)
Understand/Participate in Care	-.228(.040)	-.333(.002)
Self-efficacy Obtaining Information	-.035(.757)	-.171(.124)
Medical mistrust	.379(<.001)	.337(.002)
Discrimination	.202 (.069)	.13 (.258)
Religiosity	-.044 (.695)	-.14 (.220)
Collectivism	-.155 (.171)	-.25 (.028)
Worldview	.12 (.277)	-.02 (.888)
<u>Process of Care Factors</u>		
Healthcare Barriers	.345(.002)	.440(<.001)
Communication	-.255(.021)	-.309(.005)
Technical Quality	-.295(.007)	-.354(.001)
Accessibility/Convenience	-.169(.128)	-.228(.039)

Note: Values are presented as r(p-value)

Table 3**Multiple Regression Analysis of Predictors of Anxiety and Depression**

Predictors	Anxiety	Depression
	<i>Beta (p-value)</i>	<i>Beta (p-value)</i>
<u>Block 1: Demographic/SES</u>		
<i>Age</i>	-.224(<i>p</i> = .043)	-.305(<i>p</i> = .006)
<i>Model significance</i>	$F_{(1,80)} = 4.242, p = .043$	$F_{(1,77)} = 7.870, p = .006$
<i>Coefficient of Determination, R²</i>	5.0	9.3
<u>Block 2: Demographic/SES, Contextual</u>		
<i>Age</i>	-.210 (<i>p</i> = .034)	-.279 (<i>p</i> = .005)
<i>Self-efficacy: Positive Attitude</i>	-.289 (<i>p</i> = .010)	-.327 (<i>p</i> = .004)
<i>Self-efficacy: Understand/Participate in Care</i>	-.018 (<i>p</i> = .864)	-.034 (<i>p</i> = .748)
<i>Medical mistrust</i>	.281 (<i>p</i> = .008)	.189 (<i>p</i> = .078)
<i>Collectivism</i>	---	-.102(<i>p</i> = .318)
<i>Model significance</i>	$F_{(4,77)} = 7.24, p < .001$	$F_{(5,73)} = 7.166, p < .001$
<i>Coefficient of Determination, R²</i>	27.3	32.9
<u>Block 3: Demographic/SES, Contextual, Process of Care Factors (Final Model)</u>		
<i>Age</i>	-.174 (<i>p</i> = .097)	-.217 (<i>p</i> = .033)
<i>Self-efficacy: Positive Attitude</i>	-.260 (<i>p</i> = .029)	-.288 (<i>p</i> = .014)
<i>Self-efficacy: Understand/Participate in Care</i>	-.023 (<i>p</i> = .217)	-.033 (<i>p</i> = .757)
<i>Medical mistrust</i>	.258 (<i>p</i> = .024)	.157 (<i>p</i> = .164)
<i>Collectivism</i>	---	-.048(<i>p</i> = .634)
<i>Healthcare barriers</i>	.134 (<i>p</i> = .236)	.207 (<i>p</i> = .064)
<i>Patient Satisfaction: Communication</i>	-.230 (<i>p</i> = .147)	-.225 (<i>p</i> = .149)
<i>Patient Satisfaction: Technical quality</i>	.162 (<i>p</i> = .319)	.115 (<i>p</i> = .492)
<i>Patient Satisfaction: Accessibility</i>	---	-.002 (<i>p</i> = .986)
<i>Model significance</i>	$F(7,74) = 4.923, p < .001$	$F(9,69) = 5.113, p < .001$
<i>Coefficient of Determination, R²</i>	31.8	40.0