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Through the Lens of Culture: Quality of Life Among Latina Breast Cancer Survivors

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Abstract

BACKGROUND—Latinas have lower quality of life than Caucasian cancer survivors but we know little about factors associated with quality of life in this growing population.

METHODS—Bilingual staff conducted interviews with a national cross-sectional sample of 264 Latina breast cancer survivors. Quality of life was measured using the Functional Assessment of

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CONFLICT OF INTEREST Florencia Gonzalez, MPH and Larisa Caicedo, MA work for Nueva Vida, Inc. a non-profit agency that provides services to Latina breast cancer survivors. The authors declare that they have no other conflicts of interest.

Cancer Therapy-Breast (FACT-B). Regression models evaluated associations between culture, social and medical context and overall quality of life and its subdomains.

RESULTS—Latina survivors were 1-5 years post-diagnosis and reported a lower mean quality of life score compared to other published reports of non-Latina survivors ($M=105$; $SD=19.4$ on the FACT-B). Culturally-based feelings of breast cancer-related stigma and shame were consistently related to lower overall quality of life and lower well-being in each quality of life domain. Social and medical contextual factors were independently related to quality of life; together cultural, social and medical context factors uniquely accounted for 62% of the explained model variance of overall quality of life (Adjusted $R^2=0.53$, $P<.001$). Similar relationships were seen for quality of life subdomains in which cultural, social and medical contextual variables independently contributed to the overall variance of each final model: physical well-being (Adjusted $R^2=0.23$, $P<.001$), social well-being (Adjusted $R^2=0.51$, $P<.001$), emotional well-being (Adjusted $R^2=0.28$, $P<.001$), functional well-being (Adjusted $R^2=0.41$, $P<.001$) and additional breast concerns (Adjusted $R^2=0.40$, $P<.001$).

CONCLUSIONS—Efforts to improve Latinas' survivorship experiences should consider cultural, social and medical contextual factors to close existing quality of life gaps between Latinas and other survivors.

Keywords

Breast cancer; survivorship; Latinos; quality of life

INTRODUCTION

Breast cancer is the leading cancer diagnosed among Latino women in the United States (US) [1]. Fortunately, greater numbers of Latinas are surviving cancer in part due to improved screening and access to recommended treatment [2, 3]. Given the rapid growth and aging of the US Latino population, Latina survivors will account for an increasing proportion of the already large breast cancer survivor population. Currently, substantial gaps exist in our understanding of quality of life (QOL) among Latina survivors [4, 5].

Factors that contribute to QOL in non-Hispanic breast cancer survivors include age at diagnosis, cancer stage, relationship and employment status, symptom distress, social support and coping strategies [6-13]. Demographics such as race and ethnicity further influence survivors' QOL [14]. For example, Latina survivors report greater symptoms (fatigue, depression and strained work and spousal relationships [15-18]) and have lower overall QOL than non-Hispanic survivors [3, 5, 8, 19]. Qualitative data suggest that cultural and contextual factors such as secrecy, shame, Latina role expectations and barriers in patient-physician communication may contribute to these QOL disparities [4, 15, 20, 21].

The accumulating qualitative evidence and emerging quantitative evidence describing the experiences of Latina breast cancer survivors indicates that culture – and the impact of culture on social and medical context factors – is likely a critical influence on QOL outcomes among this group [5, 22]. In addition to the empirical evidence, conceptual approaches provide useful frameworks for describing how culture, social and contextual factors can influence QOL. Two approaches guided the present study: the Contextual Model of Health-Related QOL [20, 23] and the Ecological Model [4, 24]. These models specify individual (e.g., disease characteristics, cultural views of illness), social (e.g., social support) and contextual influences (community resources, patient satisfaction/trust in provider) on QOL [4, 23, 24]. For example, culture may influence attitudes toward body image or feelings of shame related to cancer or its treatment effects [15, 21], fatalistic attitudes about cancer [25], and how religion/spirituality impacts views of cancer [26] or QOL [27]. Culture

may also influence social connections [4], particularly identification with and attachment to family, such as the value of familism among Latinos [28], or how social isolation influences adjustment [4]. Within the broader medical context, culture and language barriers are related to expectations about medical care, symptom recognition and medical decision-making preferences [29-31]. For example, Latinas appear to experience a greater disconnect between their desired information about treatment and the information received compared to non-Latino whites [32, 33]. Language and cultural barriers likely inhibit effective patient-physician communication among Latinos [22, 34]. Likewise, the lack of continuity of care (e.g., seeing many different physicians over time) may be challenging for Latinas less familiar with the medical system [15]. Communication barriers, care discontinuity and lack of support resources following treatment may all contribute to lower treatment satisfaction or possible delays in access to needed services [22, 35, 36]. Although cultural, social and contextual factors have been explored in other minority breast cancer survivors, we are not aware of any quantitative studies that have comprehensively examined these factors as correlates of QOL in a large socioeconomically and geographically diverse sample of Latina breast cancer survivors.

In this cross-sectional study of Latina survivors we examine the independent associations of culture and social and medical context with QOL. This study adds to the literature by exploring whether unique cultural and contextual factors influence QOL within a diverse sample of Latina breast cancer survivors. We hypothesize that cultural factors and social and medical context variables are each independently related to overall QOL and its subdomains, after considering clinical and socio-demographic factors. Inclusion of QOL subdomains (physical, emotional, functional, social well-being and breast cancer specific concerns) is important given the multidimensional nature of QOL across cultures [37] and the differential predictors of various QOL outcomes [8]. Specifically, we hypothesize that better QOL will be positively related to less stigma/shame from breast cancer, more social support, and greater patient satisfaction with medical care. Guided by the contextual and ecological models of health, we further explored correlations between Latina survivors' QOL and religious coping, familism, cancer fatalism, social constraints, community resources and medical mistrust [4, 23, 24]. Results are intended to suggest specific targets amenable to intervention to help reduce disparities in survivorship outcomes for Latinas.

MATERIALS AND METHODS

Procedures

This study was conducted within the Latin American Cancer Research Coalition's (LACRC) [38] community-academic partnership. Latinas > 21 years within 1 to 5 years of their breast cancer diagnosis were eligible for participation. We recruited a national convenience sample of women through local surgeons and both local and national community clinics, oncology practices, hospitals, Latino-serving cancer support agencies, Latina-specific list serves, and the Love/Avon Army of Women [39]. Local recruitment was conducted in-person at support groups and through posted and mailed study fliers and a local Spanish-language radio program. National recruitment was conducted through mailed study invitation letters and electronic postings. All women provided verbal informed consent; all study procedures were approved by the Georgetown/Med-Star Oncology Institutional Review Board.

We developed a structured survey to capture domains of interest for the study guided by our conceptual models [4, 23, 24], existing literature [3, 5, 26, 27], topics described by Latina survivors in our formative work [21] and our partners from a community agency that serves this group (Nueva Vida, Inc.) [40]. We relied on previously validated Spanish-language instruments when available. All translated items were independently translated and back-translated by two staff; we resolved discrepancies by consensus. The final survey was

reviewed with a separate sample of 10 Latina survivors using cognitive laboratory testing [41] to ensure adequate comprehension and construct validity. This cognitive testing included use of verbal probing techniques to assess participant thoughts about and comprehension/interpretation of each item at the time the item was asked [41]. Participants completed the final 45–60 minute structured survey by telephone or mail in English or Spanish. Trained bilingual, bicultural female staff conducted telephone interviews. Women received a \$20 gift card for participation.

Measures

Sociodemographic Factors—We measured several *socio-demographic* factors, including age, education, marital status, employment, country of birth, number of years in the US, and health insurance status. We also recorded survey mode (telephone/mail), recruitment source (Love/Avon Army of Women research registry participant vs. not), and language of survey (Spanish/English). Since clinical factors may affect QOL, we measured self-reported cancer stage, date of diagnosis, and treatment type (chemotherapy, surgery type, radiation). Our primary correlate of QOL was culture as described below, captured through measures of shame/stigma associated with breast cancer [21], cancer fatalism [26], family values (familism), religious coping [21, 27], and acculturation [42, 43].

Cultural Context Factors—We measured *shame/stigma* using eight 5-point Likert scale items from the stigma subscale of the Body Image after Breast Cancer Questionnaire [44]. We translated this subscale into Spanish. Higher scores indicate greater shame/stigma; a sample item was “I feel part of me must remain hidden.” Reliability was $\alpha=0.83$.

Cancer Fatalism was measured using a modified, validated Spanish version of the Powe Fatalism Inventory [45]. We used three items from the overall scale relevant to survivors; these items were selected based on feedback during cognitive testing of the structured survey. Items assessed feelings of hopelessness and powerlessness related to treatment/survivorship. Higher scores indicate a higher degree of cancer fatalism; internal consistency was $\alpha=0.60$.

We assessed *familism* using a modified version of the Familism Scale [46]. We selected 5 items to measure familial support, familial interconnectedness and subjugation of self for family based on feedback during the cognitive interviewing process. Items were rated on a 10-point scale ($\alpha=0.80$).

We measured *religious and spiritual coping* with a modified Spanish version of the Religious Coping Scale [47]. We selected items deemed most relevant to Latina survivors based on cognitive testing of the survey. We used items capturing spiritual connection, collaborative religious coping, seeking spiritual support, spiritual discontent and religious focus; items were rated on a 4-point Likert scale ($\alpha=0.71$). We measured *acculturation* using the Spanish-language Short Acculturation Survey [43], including language use, media preferences and ethnic social relations ($\alpha=.90$).

Social Context Factors—We were also interested in the separate effects of Latinas' social context on their QOL outcomes. We assessed *Social Support* using the 8-item Duke-UNC Functional Social Support Questionnaire [48]. We translated and back-translated items measured on a 5-point Likert Scale ($\alpha=0.87$).

Community Resources were evaluated using the Neighborhood and Community Organizations subscales of the Chronic Illness Resources Survey [49]. We selected and translated five items related to health, including: “Do you have a pharmacy that has good information about breast cancer” and “As a cancer survivor, how important are community

and health organizations to you in managing your breast cancer?" Responses were made on a 5-point scale ($\alpha=0.60$).

We measured *Social Constraints* with the 5-item version of the established Social Constraints Scale [50, 51] translated into Spanish. Participants rated items on a 4-point Likert Scale to indicate if they are able to share their deepest thoughts and feelings about cancer with an important person in their life ($\alpha=0.68$). An example item was "How often did you feel that you had to keep your feelings about your breast cancer to yourself, because they made the most important person in your life feel uncomfortable?"

Medical Context Factors—We assessed interactions with the medical care system using satisfaction with care and medical mistrust. *Satisfaction with Care* was measured using a modified version of the Spanish-language Short-Form Patient Satisfaction Questionnaire [52] and included general satisfaction, interpersonal communication, satisfaction with time spent with doctor, care accessibility, technical quality and convenience subscales rated on 5-point Likert scale ($\alpha=0.80$). *Medical Mistrust* was measured using the 6-item Suspicion Subscale of the Group-Based Medical Mistrust Scale [53] ($\alpha=0.71$).

Quality of Life Outcome—QOL is our key outcome [54]. We used the 36-item Functional Assessment of Cancer Therapy-Breast (FACT-B; Version 4) [55, 56] to capture overall and domain-specific QOL because it has been validated in Spanish [57], and has demonstrated reliability, validity and sensitivity to change [55, 58]. It includes 5 subdomains: physical, emotional, functional, social (together these 4 subdomains yield the FACT-G score), and breast cancer-specific concerns. Higher scores indicate better QOL. Reliability was good for the overall scale (Cronbach's $\alpha=0.88$) and individual subdomains ($\alpha=0.60$ - 0.80).

Statistical Analyses

We generated descriptive statistics to characterize variables and used χ^2 tests, analysis of variance, Pearson correlations and *t*-tests to evaluate bivariate associations. Variables related to QOL or its subdomains at a level of $P < 0.10$ in the bivariate analyses were then included in the regression models. We conducted a series of multiple linear regression analyses using hierarchical block linear regression [59] for overall QOL and subdomains. Guided by the Contextual Model of Health-Related QOL and the Ecological Model, we first entered socio-demographic and clinical variables. Second, we entered cultural variables associated with QOL in bivariate analyses. Third, we entered social and medical contextual variables. Factors associated with QOL at $P < .05$ within each block remained in the regression models [60, 61], but we retained age, cancer stage and recruitment source regardless of significance level for face validity as these variables were associated with overall QOL in bivariate analyses or have been identified as influencing QOL in prior work [8]. We examined the relationship of each variable with QOL outcomes using standardized beta coefficients for comparability. We evaluated final model fit using R^2 and the F-statistic. We had low rates of missing data ($<2.5\%$); missing data was not imputed. To adjust for multiple comparisons, we applied the Bonferroni correction to the analyses of the five specific QOL subdomains (yielding an alpha of $P < .01$ to determine level of statistical significance). All analyses we conducted using SAS version 9.2.

RESULTS

Sample Characteristics

Latina breast cancer survivors ($N=264$) were, on average, 50.6 years old ($SD=9.9$) and 2.7 years ($SD=1.3$) from the time of diagnosis (Table 1). Women from 31 different US states/

territories participated and were recruited through the Love/Avon Army of Women research registry (32%), local and national support groups (15.5%), local and national hospitals and oncology clinics (12.5%), a national listserv for Latina women (12.5%), local and national community health education programs (11.3%) and community health clinics (9.4%), and a local agency serving Latina survivors (6.8%). The sample had varied socioeconomic status, with about one-third having a high school diploma or less (36%). Most women were diagnosed with early stage breast cancer. More than half of the women were immigrants to the US with South American (32%), Central American (20%), Caribbean (25%) or Mexican (23%) nativity. Among the US born, one-half were first generation. Two-thirds of the sample completed the survey in Spanish. Table 1 displays the bivariate relationships between sample characteristics and the cultural, social and medical context variables and overall QOL and individual QOL subdomain scores.

Overall QOL—The mean QOL score on the FACT-B was 105 (SD=19.4) and on the FACT-G (all subdomains except breast cancer concerns) was 83.0 (SD=15.4). The FACT-B score is lower than the mean and standard deviation of 112.8 (SD=20.9) reported by breast cancer patients in the validation study of the FACT-B [55], while the FACT-G score is similar to mean FACT-G scores of other samples of Latina survivors [62]. In bivariate analyses, cultural and social and medical contextual variables were significantly related to QOL (Table 1). These relationships were robust in multivariate regression analyses across individual QOL subdomains and were more strongly associated with QOL than socio-demographic and clinical variables (Tables 2 and 3).

Among the cultural constructs measured, shame/body stigma was the strongest correlate of overall QOL ($\beta = -0.42$ for each one point increase in stigma, $P < 0.001$), accounting for 23% of the variance. Social variables were independent of cultural factors and also statistically significantly associated with QOL (e.g., $\beta = 0.11$ for each one point increase in social support, $P = .002$). The overall final model explained 53% of variance in QOL (Table 2), and cultural and social factors accounted for 62% of this explained variance.

Physical Well-Being—The mean physical well-being score was 23.8 (SD=4.7). Less shame/body stigma was associated with better physical well-being ($\beta = -.31$, $P < .001$; Table 3) with a trend for cancer fatalism ($P < .05$). Variance in the model that incorporated individual and cultural factors explained 15% more variance than the model with individual characteristics alone. Lower satisfaction with medical system interactions was also associated with lower physical well-being ($\beta = .17$, $P = .003$).

Social Well-Being—The mean for social well-being was 20.0 (SD=5.5). Greater social support was related to better social well-being ($\beta = .38$, $P < .001$), while greater social constraints were associated with worse social well-being ($\beta = -.26$, $P < .001$; Table 3). Women with less body stigma reported higher social well-being than women with more stigma ($\beta = -.13$, $P = .009$). Religious coping, community resources and medical mistrust showed trends but not statistically significant associations in the final model ($P < .05$; Table 3). Cultural and social factors explained 78% of the variance in social well-being in the final model.

Emotional Well-Being—The mean for emotional well-being was 18.5 (SD=4.6). Again less stigma was related to higher emotional well-being as was greater satisfaction with the medical system ($\beta = .22$, $P < .001$) (Table 3). Cultural and medical context factors explained 75% of the final model variance in emotional well-being.

Functional Well-Being—The mean for functional well-being was 20.6 (SD=5.2). Individual, cultural and social factors were all associated with functional well-being (Table

3), but stigma was the strongest correlate ($\beta = -.33$, $P < .001$). Cultural and social context variables explained 44% of the variance in functional well-being in the final model.

Additional Breast Cancer Concerns—The mean for additional breast cancer concerns was 22.1 (SD=5.7). Breast cancer symptoms and concerns were related to disease stage at diagnosis. In addition, greater stigma was a correlate of having more breast cancer concerns, as was experiencing less familism ($\beta = -.17$, $P < .001$). Of note, women with more medical mistrust reported greater persistent symptoms and concerns ($\beta = -.14$, $P = .006$; Table 3). Cultural and medical context variables explained 65% of the final model variance in additional concerns.

DISCUSSION

This study examined cultural, social and medical contextual influences on QOL in the first 5 years after diagnosis in a large and diverse sample of Latina breast cancer survivors. Results indicate a low overall QOL in this population. As hypothesized, the cultural factor of shame and stigma related to breast cancer was the most strongly and consistently negatively associated with overall and domain-specific QOL, while acculturation was not independently related to QOL outcomes in our sample. Social factors were independently associated with overall QOL and social and functional well-being while medical contextual factors were independently related to overall QOL, physical and emotional well-being and persistent breast cancer symptoms.

Latinas in our sample had lower overall QOL than non-Latina breast cancer survivors from other studies. For example, FACT-B means of 112.8 (SD=20.9) [55] and 116.5 (SD=20.7) [12] were reported in samples of Caucasian and African American breast cancer survivors compared to a mean of 105.0 (SD=19.4) in our sample. This 7-point (or greater) difference is clinically significant [58]. Although distinct from Caucasians and African Americans, our QOL results are comparable to other large samples of Latina survivors' QOL [42, 62]. There are several potential explanations for these disparate outcomes between Latina and non-Latina survivors. First, there may be unmeasured differences in economic or social support resources that relate to general well-being [4]. As with other studies of Latina breast cancer survivors, we found that being married or employed were associated with greater QOL [19]. Second, additional unmeasured clinical differences may exist between our sample and other survivor groups. For example, level of comorbidity was related to QOL and functional outcomes among other samples of Latina [19] and Caucasian survivors [63]. However, since our sample was fairly young, this is probably not a major explanation for the observed differences. Cultural and social context may also explain these differences.

Cultural views have the potential to affect QOL in either positive or negative directions and correlate differentially with various subdomains of QOL. The small but rapidly growing literature on Latina survivors underscores the critical role that culture has on outcomes in this population [22] and culture's impact on the social and medical contexts for Latina survivors [4, 64]. For example, culturally-related reliance on religion and family-centered support could provide survivors with a sense of comfort and well-being [4] as indicated by the positive association between greater familism (connection to family) and fewer breast cancer concerns. Our results demonstrate that other values, such as cancer stigma, secrecy and shame have a consistent pervasive negative association with QOL. Cancer stigma or secrecy may also disrupt traditional Latino gender roles. We found support for the links between these role disruptions and QOL in our prior qualitative work with Latina survivors [4]. These results suggest specific avenues for clinical intervention—addressing concerns related to the stigma and shame of breast cancer through individual or couple support programs with professionals familiar with these cultural norms. The amount of variance

explained by individual, cultural and social and contextual variables within each QOL domain varied from 23% in physical well-being to 51% in social well-being, suggesting that cultural and contextual variables may be more important for different aspects of functioning in Latina survivors. For example, despite the smaller amount of variance explained in physical well-being, the significant correlates of breast cancer shame/stigma and patient satisfaction are likely modifiable factors.

As noted in reviews of survivors' QOL, we found that greater social support was associated with higher QOL in Latina survivors [5, 11]. Moreover, experiencing a constrained social environment that discourages expression of thoughts and feelings about breast cancer was associated with lower QOL [65]. This may be especially common in Latino families, as some Latino men may feel uncomfortable discussing feelings and/or offering emotional support to their wives with breast cancer [21]. Such social constraints may be of particular importance to Latinas given the prominence of culturally-related feelings of shame or secrecy [4]. Linking women to formal or informal support groups or community resources might balance or countermand the adverse relationship between feelings of stigma/shame and QOL [35].

We observed that women with higher medical mistrust and lower familism (connection to family) had greater symptom burdens and persistent concerns. Familism represents an interesting cultural variable to examine in future work, as it appears to have a non-linear relationship with QOL. Perhaps connection to one's family relates to QOL in certain circumstances, such as when survivors feel constrained in sharing thoughts and feelings about cancer [65].

Lower satisfaction with medical interactions and accessibility was also correlated with poorer physical outcomes. Latinas may have more difficulty accessing or interacting with the medical care system to obtain services related to physical functioning as a result of language or financial barriers, fears related to documentation status, mistrust, or limitations in the cultural competence of their providers [4, 66]. Feelings of secrecy and shame may further limit women's comfort in discussing symptoms or concerns with providers [4]. Given the necessity of on-going cancer care for survivors and the need to take hormonal medications for many years (among hormone positive patients), it will be important to conduct further research to improve the experiences of Latinas with the medical care system.

Beyond the consistently negative association between cancer shame/stigma and QOL, the varied patterns of cultural and social and contextual variables across QOL subdomains are congruent with evidence indicating that different antecedents are related to different types of outcomes in long-term breast cancer survivors [8]. Attention to the modifiable risk factors through psychosocial interventions and exploration of which QOL subdomains are considered most important to survivors of different racial and ethnic background will be important areas of future research. Likewise, future work can examine possible interactions between cultural, social and medical contextual factors that may impact QOL outcomes in cancer survivors. For example, future research can explore whether Latina survivors with greater family and/or community resources are less impacted by poor healthcare provider communication patient compared to survivors without those external social supports.

While study findings were robust, a few caveats should be considered in evaluating our findings. The study was cross-sectional, so we cannot draw conclusions about the temporality in the relationships between culture and contextual variables and QOL. We also did not measure all possible factors that may contribute to QOL outcomes, such as job type or patient-perceived self-efficacy in communication [5].

Participants were recruited through a non-probability sampling method. Although our sample included fewer Latinas reporting Mexican origin than in the overall US population of Hispanics (23% vs. 65%), the nativity in our sample is a cross-section of the Latino populations within the Eastern US and across the 30 states and the District of Columbia from which it was drawn [67]. Moreover, women in our sample were diverse in terms of country of origin, income, education, work status and level of acculturation. Our heterogeneous Latina sample adds depth to the growing literature on Latina survivors' QOL [5]. Finally, in the regression models, we retained only those variables with significant bivariate associations with our QOL outcomes, an approach that capitalizes on chance. However, this concern is diminished by our use of the conservative Bonferroni correction approach for multiple comparisons [68].

Results of this study suggest that future intervention research with and clinical survivorship programs for Latinas should consider the multiple cultural, social and medical contextual forces affecting the unique experiences of this growing population. The strong associations between cultural and contextual factors and QOL provide potential intervention targets to help to close the gaps in QOL between Latinas and other breast cancer survivors.

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References

1. American Cancer Society. Cancer Facts & Figures for Hispanics/Latinos 2009-2011. American Cancer Society; Atlanta, GA: <http://www.cancer.org/acs/groups/content/@nho/documents/document/ffhispanicslatinos20092011.pdf>
2. Huerta EE. Cancer statistics for Hispanics, 2003: good news, bad news, and the need for a health system paradigm change. *CA Cancer J Clin.* 2003; 53(4):205–207. [PubMed: 12924774]
3. Napoles-Springer AM, Ortiz C, O'Brien H, Diaz-Mendez M, Perez-Stable EJ. Use of cancer support groups among Latina breast cancer survivors. *J Cancer Surviv.* 2007; 1(3):193–204. [PubMed: 18648970]
4. Lopez-Class M, Gomez-Duarte J, Graves K, Ashing-Giwa K. A contextual approach to understanding breast cancer survivorship among Latinas. *Psychooncology.* 2012; 21(2):115–124. [PubMed: 21674680]
5. Yanez B, Thompson EH, Stanton AL. Quality of life among Latina breast cancer patients: a systematic review of the literature. *J Cancer Surviv.* 2011; 5(2):191–207. [PubMed: 21274649]
6. Avis NE, Crawford S, Manuel J. Quality of life among younger women with breast cancer. *J Clin Oncol.* 2005; 23(15):3322–3330. [PubMed: 15908646]
7. Bloom JR, Stewart SL, Johnston M, Banks P, Fobair P. Sources of support and the physical and mental well-being of young women with breast cancer. *Soc Sci Med.* 2001; 53(11):1513–1524. [PubMed: 11710426]
8. Carver CS, Smith RG, Petronis VM, Antoni MH. Quality of life among long-term survivors of breast cancer: Different types of antecedents predict different classes of outcomes. *Psychooncology.* 2006; 15(9):749–758. [PubMed: 16304622]
9. Dow KH, Ferrell BR, Leigh S, Ly J, Gulasekaram P. An evaluation of the quality of life among long-term survivors of breast cancer. *Breast Cancer Res Treat.* 1996; 39(3):261–273. [PubMed: 8877006]

10. Mehnert A, Koch U. Psychological comorbidity and health-related quality of life and its association with awareness, utilization, and need for psychosocial support in a cancer register-based sample of long-term breast cancer survivors. *J Psychosom Res.* 2008; 64(4):383–391. [PubMed: 18374737]
11. Mols F, Vingerhoets AJ, Coebergh JW, van de Poll-Franse LV. Quality of life among long-term breast cancer survivors: a systematic review. *Eur J Cancer.* 2005; 41(17):2613–2619. [PubMed: 16226458]
12. Northouse LL, Caffey M, Deichelbohrer L, Schmidt L, Guziatek-Trojnick L, West S, Kershaw T, Mood D. The quality of life of African American women with breast cancer. *Res Nurs Health.* 1999; 22(6):449–460. [PubMed: 10630287]
13. Paskett E, Herndon J, Donohue K, Naughton M, Grubbs S, Pavy M, Hensley M, Stark N, Kornblith A, Bittoni M, for Cancer and Leukemia Group. Health-related quality of life in long-term breast cancer survivors: differences by adjuvant chemotherapy dose in Cancer and Leukemia Group B study 8541. *Cancer.* 2009; 115(5):1109–1120. [PubMed: 19170232]
14. Bowen DJ, Alfano CM, McGregor BA, Kuniyuki A, Bernstein L, Meeske K, Baumgartner KB, Fetherolf J, Reeve BB, Smith AW, Ganz PA, McTiernan A, Barbash RB. Possible socioeconomic and ethnic disparities in quality of life in a cohort of breast cancer survivors. *Breast Cancer Res Treat.* 2007; 106(1):85–95. [PubMed: 17260096]
15. Ashing-Giwa KT, Padilla GV, Bohorquez DE, Tejero JS, Garcia M. Understanding the breast cancer experience of Latina women. *J Psychosoc Oncol.* 2006; 24(3):19–52. [PubMed: 17088240]
16. Blinder VS, Patil S, Thind A, Diamant A, Hudis CA, Basch E, Maly RC. Return to work in low-income Latina and non-Latina white breast cancer survivors: A 3-year longitudinal study. *Cancer.* 2012; 118(6):1664–1674. [PubMed: 22009703]
17. Epstein, RM.; Street, RL Jr. Patient-Centered Communication in Cancer Care: Promoting Healing and Reducing Suffering. National Cancer Institute; Bethesda, MD: 2007. NIH Publication No. 07-6225 http://outcomes.cancer.gov/areas/pcc/communication/pccm_cover_title.pdf
18. Eversley R, Estrin D, Dibble S, Wardlaw L, Pedrosa M, Favila-Penney W. Post-treatment symptoms among ethnic minority breast cancer survivors. *Oncol Nurs Forum.* 2005; 32(2):250–256. [PubMed: 15759063]
19. Napoles AM, Ortiz C, O'Brien H, Sereno AB, Kaplan CP. Coping resources and self-rated health among Latina breast cancer survivors. *Oncol Nurs Forum.* 2011; 38(5):523–531. [PubMed: 21875840]
20. Ashing-Giwa K, Kagawa-Singer M. Infusing culture into oncology research on quality of life. *Oncol Nurs Forum.* 2006; 33(1 Suppl):31–36. [PubMed: 17202087]
21. Lopez-Class M, Perret-Gentil M, Kreling B, Caicedo L, Mandelblatt J, Graves KD. Quality of life among immigrant Latina breast cancer survivors: realities of culture and enhancing cancer care. *J Cancer Educ.* 2011; 26(4):724–733. [PubMed: 21706194]
22. Yanez B, Stanton AL, Maly RC. Breast cancer treatment decision making among Latinas and non-Latina whites: A communication model predicting decisional outcomes and quality of life. *Health Psychol.* 2012; 31(5):552–561. [PubMed: 22746263]
23. Ashing-Giwa KT. The contextual model of HRQoL: a paradigm for expanding the HRQoL framework. *Qual Life Res.* 2005; 14(2):297–307. [PubMed: 15892421]
24. McLeroy KR, Bibeau D, Steckler A, Glanz K. An ecological perspective on health promotion programs. *Health Educ Q.* 1988; 15(4):351–377. [PubMed: 3068205]
25. Perez-Stable EJ, Sabogal F, Otero-Sabogal R, Hiatt RA, McPhee SJ. Misconceptions about cancer among Latinos and Anglos. *JAMA.* 1992; 268(22):3219–3223. [PubMed: 1433762]
26. Abraido-Lanza AE, Viladrich A, Florez KR, Cespedes A, Aguirre AN, De La Cruz AA. Commentary: fatalismo reconsidered: a cautionary note for health-related research and practice with Latino populations. *Ethn Dis.* 2007; 17(1):153–158. [PubMed: 17274225]
27. Wildes KA, Miller AR, de Majors SS, Ramirez AG. The religiosity/spirituality of Latina breast cancer survivors and influence on health-related quality of life. *Psychooncology.* 2009; 18(8):831–840. [PubMed: 19034922]

28. Luquis RR, Villanueva C.I. Knowledge, attitudes, and perceptions about breast cancer and breast cancer screening among Hispanic women residing in South Central Pennsylvania. *J Community Health*. 2006; 31(1):25–42. [PubMed: 16482764]
29. Betancourt JR, Green AR, Carrillo JE, Ananeh-Firempong O. Defining cultural competence: a practical framework for addressing racial/ethnic disparities in health and health care. *Public Health Rep*. 2003; 118(4):293–302. [PubMed: 12815076]
30. Hawley ST, Janz NK, Hamilton A, Griggs JJ, Alderman AK, Mujahid M, Katz SJ. Latina patient perspectives about informed treatment decision making for breast cancer. *Patient Educ Couns*. 2008; 73(2):363–370. [PubMed: 18786799]
31. Kleinman A, Eisenberg L, Good B. Culture, illness, and care: clinical lessons from anthropologic and cross-cultural research. *Ann Intern Med*. 1978; 88(2):251–258. [PubMed: 626456]
32. Janz NK, Mujahid MS, Hawley ST, Griggs JJ, Hamilton AS, Katz SJ. Racial/ethnic differences in adequacy of information and support for women with breast cancer. *Cancer*. 2008; 113(5):1058–1067. [PubMed: 18618494]
33. Maly RC, Leake B, Silliman RA. Health care disparities in older patients with breast carcinoma: informational support from physicians. *Cancer*. 2003; 97(6):1517–1527. [PubMed: 12627517]
34. Lim JW, Gonzalez P, Wang-Letzkus MF, Ashing-Giwa KT. Understanding the cultural health belief model influencing health behaviors and health-related quality of life between Latina and Asian-American breast cancer survivors. *Support Care Cancer*. 2009; 17(9):1137–1147. [PubMed: 19050938]
35. Galvan N, Buki LP, Garces DM. Suddenly, a carriage appears: social support needs of Latina breast cancer survivors. *J Psychosoc Oncol*. 2009; 27(3):361–382. [PubMed: 19544182]
36. Schyve PM. Language differences as a barrier to quality and safety in health care: the Joint Commission perspective. *J Gen Intern Med*. 2007; 22(Suppl 2):360–361. [PubMed: 17957426]
37. Power M, Harper A, Bullinger M. The World Health Organization WHOQOL-100: tests of the universality of Quality of Life in 15 different cultural groups worldwide. *Health Psychol*. 1999; 18(5):495–505. [PubMed: 10519466]
38. Kreling BA, Canar J, Catipon E, Goodman M, Pallesen N, Pomeroy J, Rodriguez Y, Romagoza J, Sheppard VB, Mandelblatt J, Huerta EE. Latin American Cancer Research Coalition. Community primary care/academic partnership model for cancer control. *Cancer*. 2006; 107(8 Suppl):2015–2022.
39. Dr.Susan Love Research Foundation. [Accessed December 22, 2011] Army of Women website. <http://www.dsrlf.org/army/>
40. [Accessed May 25, 2012] Nueva Vida website. <http://www.nueva-vida.org/index.php>
41. Willis, GB. Reducing Survey Error Through Research on the Cognitive and Decision Processes in Surveys. Research Triangle Institute; Research Triangle Park, NC: 1999. Cognitive Interviewing: A “How To” Guide. <http://appliedresearch.cancer.gov/areas/cognitive/interview.pdf>
42. 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(4): 212–222. [PubMed: 19760151]
43. Marin G, Sabogal F, Marin BV, Otero-Sabogal R, Perez-Stable EJ. Development of a short acculturation scale for Hispanics. *Hispanic J Behav Sci*. 1987; 9(2):183–205.
44. Baxter NN, Goodwin PJ, McLeod RS, Dion R, Devins G, Bombardier C. Reliability and validity of the body image after breast cancer questionnaire. *Breast J*. 2006; 12(3):221–232. [PubMed: 16684320]
45. Lopez-McKee G, McNeill JA, Eriksen LR, Ortiz M. Spanish translation and cultural adaptation of the Powe Fatalism Inventory. *J Nurs Scholarsh*. 2007; 39(1):68–70. [PubMed: 17393968]
46. Lugo Steidel AG, Contreras JM. A new familism scale for use with Latino populations. *Hispanic J Behav Sci*. 2003; 25(3):312–330.
47. Pargament KI, Koenig HG, Perez LM. The many methods of religious coping: development and initial validation of the RCOPE. *J Clin Psychol*. 2000; 56(4):519–543. [PubMed: 10775045]
48. Broadhead WE, Gehlbach SH, de Gruy FV, Kaplan BH. The Duke-UNC Functional Social Support Questionnaire. Measurement of social support in family medicine patients. *Med Care*. 1988; 26(7):709–723.

49. Glasgow RE, Strycker LA, Toobert DJ, Eakin E. A social-ecologic approach to assessing support for disease self-management: the Chronic Illness Resources Survey. *J Behav Med.* 2000; 23(6): 559–583. [PubMed: 11199088]
50. Lepore SJ, Silver RC, Wortman CB, Wayment HA. Social constraints, intrusive thoughts, and depressive symptoms among bereaved mothers. *J Pers Soc Psychol.* 1996; 70(2):271–282. [PubMed: 8636882]
51. Schnur JB, Valdimarsdottir HB, Montgomery GH, Nevid JS, Bovbjerg DH. Social constraints and distress among women at familial risk for breast cancer. *Ann Behav Med.* 2004; 28(2):142–148. [PubMed: 15454362]
52. Marshall, GN.; Hays, RD. The Patient Satisfaction Questionnaire Short-Form (PSQ-18). RAND; Santa Monica, CA: 1994. <http://www.rand.org/pubs/papers/2006/P7865.pdf>
53. 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(2):209–218. [PubMed: 14715214]
54. Gotay CC, Kawamoto CT, Bottomley A, Efficace F. The prognostic significance of patient-reported outcomes in cancer clinical trials. *J Clin Oncol.* 2008; 26(8):1355–1363. [PubMed: 18227528]
55. Brady MJ, Cella DF, Mo F, Bonomi AE, Tulskey DS, Lloyd SR, Deasy S, Cobleigh M, Shiimoto G. Reliability and validity of the Functional Assessment of Cancer Therapy-Breast quality-of-life instrument. *J Clin Oncol.* 1997; 15(3):974–986. [PubMed: 9060536]
56. [Accessed December 22, 2011] FACIT.org website. <http://www.facit.org/FACITOrg>
57. Cella D, Hernandez L, Bonomi AE, Corona M, Vaquero M, Shiimoto G, Baez L. Spanish language translation and initial validation of the functional assessment of cancer therapy quality-of-life instrument. *Med Care.* 1998; 36(9):1407–1418. [PubMed: 9749663]
58. Eton DT, Cella D, Yost KJ, Yount SE, Peterman AH, Sledge GW. Minimally important differences on the functional assessment of cancer therapy-breast (FACT-B) scale: Results from ECOG study 1193. *Proc Am Soc Clin Oncol.* 2003;22. (abstract 2142).
59. Raudenbush, SW.; Bryk, AS. Hierarchical Linear Models: Applications and Data Analysis Methods. 2nd ed. Sage Publications; Thousand Oaks, CA: 2002.
60. Hosmer, DW.; Lemeshow, S. Applied Logistic Regression. Wiley; New York, NY: 2000.
61. Jensen RE, Arora NK, Bellizzi KM, Rowland JH, Hamilton AS, Aziz NM, Potosky AL. Health-related quality of life among survivors of aggressive Non-Hodgkin Lymphoma. *Cancer.* 2012 [Epub ahead of print].
62. Ashing-Giwa KT, Tejero JS, Kim J, Padilla GV, Hellemann G. Examining predictive models of HRQOL in a population-based, multiethnic sample of women with breast carcinoma. *Qual Life Res.* 2007; 16(3):413–428. [PubMed: 17279444]
63. Deshpande AD, Sefko JA, Jeffe DB, Schootman M. The association between chronic disease burden and quality of life among breast cancer survivors in Missouri. *Breast Cancer Res Treat.* 2011; 129(3):877–886. [PubMed: 21519836]
64. Wildes KA, Miller AR, de Majors SS, Otto PM, Ramirez AG. The satisfaction of Latina breast cancer survivors with their healthcare and health-related quality of life. *J Womens Health (Larchmt).* 2011; 20(7):1065–1074. [PubMed: 21736447]
65. Lepore SJ, Helgeson VS. Social constraints, intrusive thoughts and mental health after prostate cancer. *J Soc Clin Psychol.* 1998; 17(1):89–106.
66. Adler, NE.; Page, AEK., editors. Cancer Care for the Whole Patient: Meeting Psychosocial Health Needs. Institute of Medicine of The National Academies Press; Washington, DC: 2007.
67. Pew Research Center. [Accessed May 25, 2012] Pew Hispanic Center website. <http://www.pewhispanic.org/2011/05/26/country-of-origin-profiles/>
68. Dunn OJ. Multiple comparisons among means. *J Am Stat Assoc.* 1961; 56(293):52–64.

Table 1
 Characteristics of Latina Breast Cancer Survivors (N = 264) and Bivariate Associations with Overall Quality of Life and Subdomains

Variable Demographics	Mean (SD)	Bivariate Associations					
		Overall QOL	Physical Well-being	Social Well-being	Emotional Well-being	Functional Well-being	Breast Cancer Concerns
Mean Age (y)	50.6 (9.9)	$r = .10^{\dagger}$	$r = .08$	$r = -.04$	$r = .19^{**}$	$r = .002$	$r = .16^{**}$
Mean Time Since Diagnosis (y)	2.72 (1.3)	$r = .02$	$r = .02$	$r = -.03$	$r = .07$	$r = -.007$	$r = .05$
Disease Stage ^a	n (%)	$F(4)=5.75^{***}$	$F(4)=5.44^{***}$	$F(4)=1.28$	$F(4)=3.83^{**}$	$F(4)=2.94^{*}$	$F(4)=5.53^{***}$
Stage 0	23 (8.8)						
Stage I	84 (32.2)						
Stage II	94 (36.0)						
Stage III	48 (18.4)						
Stage IV	12 (4.6)						
Education	n (%)	$r = .29^{***}$	$r = .14^{*}$	$r = .26^{***}$	$r = .13^{*}$	$r = .36^{***}$	$r = .17^{**}$
<High School	50 (18.9)						
High School Grad	47 (17.8)						
Some College	46 (17.4)						
Bachelor's degree	61 (23.1)						
Graduate degree	60 (22.8)						
Country of Origin ^b	n (%)	$t = -3.11^{**}$	$t = -1.57$	$t = -4.00$	$t = -0.50$	$t = -5.30^{***}$	$t = -0.34$
US Born	110 (41.7)						
Non-US Born	154 (58.3)						
Recruitment Source	n (%)	$t = -4.35^{***}$	$t = -4.14^{***}$	$t = -4.14^{***}$	$t = -1.80^{\dagger}$	$t = -4.67^{***}$	$t = -3.04^{**}$
Army of Women Registry	84 (31.8)						
Non-Registry	180 (68.2)						
Health Insurance	n (%)	$t = -1.79$	$t = -0.77$	$t = -2.31^{*}$	$t = -0.93$	$t = -1.73$	$t = -0.92$
Insured	235 (89.0)						
Uninsured	29 (11.0)						
Employment Status	n (%)	$t = -2.86^{**}$	$t = -2.16^{*}$	$t = -2.30^{*}$	$t = -0.53$	$t = -4.18^{***}$	$t = -1.70^{\dagger}$
Employed full/part-time	163 (61.7)						

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Variable Demographics	Bivariate Associations					
	Mean (SD)	Overall QOL	Physical Well-being	Social Well-being	Emotional Well-being	Functional Well-being
Not employed	101 (28.3)					
Marital Status	n (%)	t = -2.43 *	t = -2.06 *	t = -2.66 **	t = -0.74	t = -1.84 †
Married	151 (57.2)					
Not married/divorced/widowed	113 (42.8)					
Treatment Type ^d	n (%)					
Had Chemotherapy	180 (68.2)	t = -1.08	t = -1.28	t = -0.22	t = -1.34	t = 0.17
Had Radiation	181 (68.5)	t = -1.84 †	t = -2.16 *	t = -2.02 *	t = -0.95	t = -1.47
Had a Mastectomy	107 (40.5)	t = -2.44 *	t = -1.27	t = -0.22	t = -1.81 †	t = -1.93 †
Cultural Factors (Score Range)	Mean (SD)					
Stigma/Shame (8-40)	17.3 (7.3)	r = -.57 ***	r = -.38 ***	r = -.33 ***	r = -.44 ***	r = -.43 ***
Familism (15-50)	39.9 (7.7)	r = .02	r = .02	r = .17 **	r = .03	r = -.02
Cancer Fatalism (0-3)	0.9 (0.9)	r = -.22 ***	r = -.17 **	r = -.13 *	r = -.23 ***	r = -.07
Religious Coping (5-18)	14.5 (2.9)	r = .02	r = -.01	r = .12 *	r = .00	r = .07
Acculturation (9-56)	27.1 (10.2)	r = .29 ***	r = .14 *	r = .28 ***	r = .16 *	r = .35 ***
Social and Medical Context (Score Range)	Mean (SD)					
Social Support (1-5)	4.3 (0.8)	r = .40 ***	r = .19 **	r = .59 ***	r = .19 **	r = .38 ***
Social Constraints (1-4)	1.9 (0.8)	r = -.37 ***	r = -.22 ***	r = -.40 ***	r = -.23 ***	r = -.27 ***
Community Resources (1-5)	3.4 (0.8)	r = .19 **	r = .08	r = .30 ***	r = .05	r = .23 ***
Medical Mistrust (6-25)	13.4 (4.1)	r = -.35 ***	r = -.22 ***	r = -.36 ***	r = -.23 **	r = -.25 ***
Patient Satisfaction (1-5)	3.9 (0.6)	r = .34 ***	r = .24 ***	r = .26 ***	r = .31 ***	r = .21 **

^aMissing disease stage data for 3 participants.^bListing of participants' countries of origin available upon request.^cTreatment type comparisons=had specified treatment vs. did not have specified treatment.***
P<.0001,

** P<.01,
* P<.05
† P .10

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Table 2

Contributions of Cultural and Social and Medical Contextual Factors to Latina Survivors' Overall Quality of Life

Variable	First Model Standardized β	Second Model Standardized β	Final Model Standardized β
Demographics:			
Age	.15 *	.07	.05
Disease Stage	-.15 *	-.07	-.07
Education	.22 ***	.12 *	.11
AOW Registry Participant	.16 *	.06	.06
Employed	.08	.07	.10 *
Married	.16 **	.16 **	.13 **
Had Radiation	-.12	-.11	-.07
Had a Mastectomy	.14 *	.01	-.02
Cultural:			
Body Stigma/Shame		-.53 ***	-.42 ***
Higher Acculturation		.15 *	.09
Social and Medical Contextual:			
Social Support			.15 **
Medical Mistrust			-.09
Social Constraints			-.11 *
Patient Satisfaction			.10 *
F(df)	F(8,252)= 9.36 ***	F(10,249)= 22.09 ***	F(14,244)= 21.49 ***
Adjusted R ²	.20	.45	.53

Note: We entered demographics in the first model, cultural factors in the second model, and social and medical contextual factors in the third model. AOW=Army of Women.

*
P < .05,

**
P < .01,

P < .001

Table 3

Contributions of Cultural and Social and Medical Contextual Factors to Subdomains of Latina Survivors' Quality of Life

Variable	First Model Standardized β	Second Model Standardized β	Final Model Standardized β
	Physical Well-Being		
Demographics:			
Age	.10	.05	.04
Disease Stage	-.18 **	-.09	-.10
AOW Registry Participant	.10	.04	.02
Employed	.12	.11	.10
Married	.12	.13	.13
Radiation	-.06	-.11	-.11
Cultural:			
Fatalism		-.10	-.09
Body Stigma/Shame		-.34 ***	-.31 ***
Social and Medical Contextual:			
Patient Satisfaction			.17 **
Adjusted R ²	.08 **	.20 ***	.23 ***
	Social Well-Being		
Demographics:			
Age	.001	-.05	-.06
Disease Stage	-.07	-.01	.02
AOW Registry Participant	.16	.18 **	.12
Employed	.11	.09	.13 **
Married	.15	.13	.08
US Born	.18 **	.21 **	.06
Cultural:			
Familism		.16 **	-.02
Religious Coping		.14	.10
Body Stigma/Shame	-.32 ***		-.13 **
Social and Medical Contextual:			
Community Resources			.12
Medical Mistrust			-.12
Social Support			.38 ***
Social Constraints			-.26 ***
Adjusted R ²	.11 ***	.26 ***	.51 ***
Demographics:			

Variable	First Model Standardized β	Second Model Standardized β	Final Model Standardized β
Age	.16 ^{**}	.11	.09
Disease Stage	-.18 ^{**}	-.09	-.09
AOW Registry Participant	.12	.06	.03
Cultural:			
Fatalism		-.16 ^{**}	-.14
Body Stigma/Shame		-.38 ^{***}	-.34 ^{***}
Social and Medical Contextual:			
Patient Satisfaction			.22 ^{***}
Adjusted R ²	.07 ^{***}	.23 ^{***}	.28 ^{***}
	Functional Well-Being		
Demographics:			
Age	.07	-.001	-.01
Time Since Diagnosis	.09	.09	.11
Disease Stage	-.18 ^{**}	-.09	-.09
Education	.20 ^{**}	.16 ^{**}	.13
AOW Registry Participant	.14 [*]	.11	.07
Employed	.16 ^{**}	.14 [*]	.16 ^{**}
US Born	.17 ^{**}	.20 ^{***}	.15 ^{**}
Chemotherapy	.12	.09	.07
Cultural:			
Body Stigma/Shame		-.38 ^{***}	-.33 ^{***}
Social and Medical Contextual:			
Community Resources	.08		
Social Support			.23 ^{***}
Adjusted R ²	.23 ^{***}	.36 ^{***}	.41 ^{***}
	Additional Concerns		
Demographics:			
Age	.11	.05	.06
Disease Stage	-.21 ^{***}	-.13 ^{**}	-.14 ^{**}
AOW Registry Participant	.18 ^{**}	.12	.08
Married	.12	.13	.12
Had a Mastectomy	.17 ^{**}	.05	.03
Cultural:			
Familism		-.16 ^{**}	-.17 ^{***}
Body Stigma/Shame		-.51 ^{***}	-.48 ^{***}
Social and Medical Contextual:			

Variable	First Model Standardized β	Second Model Standardized β	Final Model Standardized β
Medical Mistrust			-.14 **
Adjusted R ²	.14 ***	.39 ***	.40 ***

Note: We entered demographics in the first model, cultural factors in the second model, and social and medical contextual factors in the third model.

**
P < .01,

P < .001. AOW=Army of Women.