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Does Rurality Affect Quality of Life Following Treatment for Breast Cancer?

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Abstract

Purpose—The present research examined the extent to which rural residence and social support seeking are associated with quality of life (QOL) among breast cancer patients following chemotherapy.

Methods—Female breast cancer patients (n = 46) from communities of varying degrees of rurality in a mid-sized Midwestern state completed psychological and QOL measures at 1 month post-chemotherapy. Analyses assessed the relationships between QOL outcomes, rurality, and social support seeking.

Findings—Using age and education as covariates, regression analyses were conducted to determine the extent to which QOL was related to social support seeking and rural/urban residence. Analyses revealed that social support seeking was associated with lower scores on multiple indices of QOL, and it was associated with higher self-reported symptoms of depression. Several significant associations with rural/urban residence were noted as well. Specifically, increasing rurality, as defined by USDA Rural-Urban continuum codes, was associated with lower overall QOL, lower functional well-being, and increased complaints of breast cancer-specific symptoms.

Conclusions—These findings highlight the relevance of continued efforts to address social support needs among women with a history of breast cancer living in rural and urban communities. They also suggest that individuals in more rural communities may be at risk for lowered QOL in the early period following cancer treatment. Future research is needed to replicate these results with larger and more diverse samples of rural and urban dwelling individuals, and to determine whether these effects may be attributed to identifiable characteristics of rural communities (eg, fewer cancer-related resources).

Keywords

cancer; quality of life; rural; social support

As reviewed by Bettencourt and colleagues,1 a number of studies have considered psychosocial issues as they relate to the experiences of rural dwelling women who have been treated for breast cancer. While many concerns reported by rural women are commensurate with those identified by urban women (eg, body image, effects of cancer diagnosis and treatment on family members), some differences seem to be emerging. In general, women living in rural areas may be more likely to experience distress than women

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living in urban communities.[2] In addition to a recognized shortage of mental health care in rural communities,[3] issues of stigma related to mental health care and expectations of self-sufficiency may limit acceptance of mental health services in rural areas.[4] Among rural women living with cancer, high levels of depression and hopelessness/helplessness have been noted.[5] Rural women living with cancer report lower than average quality of life[6] and may have particular concerns about being stigmatized within their communities as a result of their cancer diagnosis.[7]

One way in which rural and urban areas may differ is in the availability of community-based social support. The importance of social support as a buffer to emotional distress has been widely studied among a variety of medical populations[8] including individuals living with cancer.[9] Potential effects of rural versus urban residence have been noted, although findings are somewhat equivocal, as both benefits and hindrances to well-being have been identified. For example, given the shortage of mental health care providers in rural communities,[3] geographic distance may limit availability of professional social support for rural women.[10] On the other hand, several characteristics of rural communities may be of benefit to individuals coping with cancer. Rural communities often value close relationships with family, community members and religious institutions,[4,11] all of which can be excellent sources of social support. In fact, studies have highlighted the perceived benefit of increased community support experienced by female cancer survivors living in rural compared to urban areas.[12] Thus, while there may be limited cancer-specific support services in many rural communities, women living in rural areas may have community networks which make general social support readily available.[13]

Due to unanswered questions regarding whether rurality may affect quality of life among cancer survivors, and recognizing the importance of social support in quality of life outcomes regardless of residence, analyses presented herein were conducted to examine the extent to which rural residence and social support seeking affect quality of life among breast cancer survivors in the early post-treatment period.

Methods

Study Procedure

Potential participants were recruited from three sites (an academic hospital, a private hospital, and a private oncology practice) in a mid-sized Midwestern community; informed written consent for study participation was obtained per institutional guidelines. Within 1 month of finishing chemotherapy, participants completed measures described below, in the researcher's office or in the facility where the patient was receiving her cancer care, as part of a larger study that has been previously described.[14,15]

Participants

Participants included forty-six women with Stage I (24%), Stage II (47%) or Stage III (29%) breast cancer. Exclusion criteria were: age younger than 18, previous chemotherapy treatment, chronic psychiatric illness, known neurological condition, and non-native English speaking. The average participant age was 53.38 years (SD = 9.61), with an average of 14.87 years (SD = 2.56) of education. Sixty-four percent were married; all participants self-identified as Caucasian.

Predictor Variables

Rurality—Rurality was defined by USDA county continuum codes based on population size, degree of urbanization and proximity to metro area.[16] This coding rubric provides a continuous variable (range 1 – 9) that was used for regression analyses. For ANOVA and

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correlation analyses, "urban" was defined as codes 1 – 3 while "rural" included codes 4 – 9, according to USDA's guidelines for designating regions as "metro" or "non-metro."[16]

Social Support Seeking—The Hesitation Scale[17] assesses cognitive appraisals that may limit an individual's ability or willingness to turn to others for social support. The measure comprises 20 items; higher scores represent more negative attitudes about social support seeking.

Outcome Variables

Psychological functioning—Symptoms of depression were documented with the Beck Depression Inventory-Second Edition (BDI-II).[18]

Quality of life—Two measures were used to assess quality of life: a single-item question ("In general, how satisfied are you with your overall quality of life?") using a 5-point Likert scale, and the Functional Assessment of Cancer Therapy-Breast (FACT-B).[19] The FACT-B has 44 items across six subscales: Physical Well-Being (PWB), Social/Family Well-Being (SWB), Emotional Well-Being (EWB), Functional Well-Being (FWB), Relationship With Doctor (RWD), and Breast Cancer Specific Symptoms (BrCA).

Results

Rural/Urban Comparisons

One-way ANOVAs revealed that rural participants were older (Rural age: M = 56.4, SD = 7.6; Urban age: M = 46.0, SD = 8.2; $F[1, 45] = 19.01$, $P < .001$) and slightly less educated (Rural years education: M = 14.0, SD = 2.5; Urban years education M = 15.4, SD = 2.5; $F[1, 45] = 3.84$, $P = .06$). There were no group differences in terms of BDI, Hesitation, or FACT-B subscales (all $Fs[1, 45] < 1.44$, n.s.).

Regression Analyses

Multiple regressions were performed to determine whether rurality and support seeking were associated with QOL and depression. Independent variables were centered and entered simultaneously as predictors in all of the analyses.[20] Participants' ages and education levels were entered as covariates to control for demographic differences. Only significant findings are reported.

The effects of age on well-being—Analyses revealed a single main effect of age on well-being. Specifically, increasing age was associated with higher reported satisfaction with overall quality of life, $\beta = .33$ (SE = .02), $t = -2.63$, $P = .01$.

The effects of rurality on well-being—Analyses revealed three main effects of rurality: women living in more rural communities reported less satisfaction with overall quality of life, $\beta = -.29$ (SE = .09), $t = -2.21$, $P = .03$, lower functional well-being (FACT-B FWB), $\beta = -.26$ (SE = .35), $t = -1.91$, $P = .06$, and more breast cancer specific symptoms (FACT-B BrCA), $\beta = -.32$ (SE = .41), $t = -2.10$, $P = .04$, compared to women living in larger communities.

The effects of hesitation to seek social support on well-being—Analyses revealed a significant effect of hesitation to seek social support on social well-being (FACT-B SWB), $\beta = -.63$ (SE = .06), $t = -4.41$, $P < .001$, emotional well-being (FACT-B EWB), $\beta = -.70$ (SE = .04), $t = -5.74$, $P < .001$, functional well-being (FACT-B FWB) $\beta = -.65$ (SE = .05), $t = -4.90$, $P < .001$, breast cancer specific symptoms (FACT-B BrCA scale) $\beta = -.44$ (SE = .06), $t = -2.92$, $P < .01$, physical well-being (FACT-B PWB) $\beta = -.46$ (SE = .07), t =

−2.75, $P = .009$, and satisfaction with overall QOL, $\beta = -.64$ (SE = .01), $t = -5.13$, $P < .001$). In all cases, greater hesitation to seek social support was associated with lower scores on measures of well-being. A significant effect of social support on depression scores was also noted, $\beta = .66$ (SE = .09), $t = 4.88$, $P < .001$; women who reported greater hesitation to seek social support also reported higher feelings of depression.

Discussion

The months following cancer treatment can be a period of adjustment and heightened stress for women diagnosed with cancer, perhaps in part because supports that are readily available in cancer treatment centers are no longer present.21 Thus, understanding factors that are associated with quality of life in the early stages following treatment completion is an important step in identifying opportunities for intervention.

The present study documented the positive relationship between social support seeking and quality of life among breast cancer survivors shortly after completion of chemotherapy. These findings are consistent with prior research9 and suggest a common determinant of quality of life among rural and urban dwelling women in the early period following the completion of cancer treatment.

Analyses also highlighted potential differences in the experiences of women breast cancer survivors in more rural communities. Specifically, increased rurality was associated with reports of lower overall well-being, lower functional well-being (eg, ability to work, enjoyment of life, acceptance of illness), and increased concerns about breast cancer specific symptoms (eg, hair loss, weight change, lymphedema) at 1 month following treatment completion. These findings are consistent with prior research reporting lower quality of life among rural dwelling breast cancer survivors,6 and they suggest that characteristics of the communities to which patients return can have an effect on quality of life outcomes. However, while providing preliminary indications that rural residence may be associated with lower quality of life in some domains, this study also highlights the fact that individual variables, such as willingness to seek social support, may be even more central to early quality of life outcomes experienced by breast cancer survivors.

While an effort was made to capture differences in rural communities by utilizing USDA continuum codes16 for defining relative degree of rurality for this study, the authors recognize that the rural life experience is not homogenous, and that many different community and regional factors may affect quality of life experienced by women living with cancer. Findings from these analyses are perhaps best considered as a snapshot of the experiences of women living in rural and urban communities in the Midwest, and as a potential catalyst for subsequent studies on the experiences of cancer survivors in this and other regions.

To follow up on these findings, future research on quality of life outcomes in rural cancer survivors should focus on obtaining additional detail regarding characteristics of the communities where study participants reside, as information is needed to capture nuances of communities that may affect outcomes. By documenting characteristics of rural and urban communities that may affect quality of life outcomes (eg, availability of social support, mental health care, follow-up medical care), future studies can offer direction regarding how to enhance the post-treatment experiences of cancer survivors residing in both rural and urban communities.

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