

# Determination of Factors Associated With Hospitalization in Breast Cancer Survivors

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**Purpose/Objectives:** To identify factors associated with hospitalization after diagnosis of breast cancer in working-age women.

**Design:** Descriptive, retrospective survey.

**Setting:** Caseload of a single medical oncologist affiliated with an urban, not-for-profit, academic medical center.

**Sample:** 123 consecutively evaluated women aged 21–65 years with breast cancer associated with projected survival greater than three years.

**Methods:** Data were collected from an electronic clinical file with demographic, diagnostic, and hormone replacement therapy (HRT) information. Four survey forms were mailed to subjects: (a) a form ascertaining personal demographics, health status, and healthcare utilization, (b) menopausal Symptom Rating Scale, (c) a hot flash diary, and (d) the Center for Epidemiologic Studies Depression Scale.

**Main Research Variables:** Menopausal symptoms, depression symptoms, age, time since diagnosis, and overnight hospitalization.

**Findings:** An increasing depression score and increasing menopausal symptoms score were found to be independent predictors of hospitalization controlling for age at diagnosis, disease stage, and time since diagnosis. Demographic variables, HRT use at or prior to diagnosis (a proxy measure of health status), current self-reported health status, and hot flashes were not associated with hospitalization.

**Conclusions:** Psychological factors can be important significant predictors of hospitalization in survivors of breast cancer independent of disease stage. Further study should be undertaken to determine whether support services directed at identifying and treating those at risk for depression or menopausal symptoms may reduce the likelihood of potentially avoidable hospitalization.

**Implications for Nursing:** The identification of those at high risk for hospitalization because of high levels of depressive or menopausal symptoms and prompt intervention offer the opportunity to improve the quality of life of breast cancer survivors and reduce the cost of health care for themselves, their families, and the healthcare system.

## Key Points . . .

- The hospitalization rate among breast cancer survivors is higher than for the general population of age-comparable women.
- An increasing menopausal symptoms score is associated with an increased likelihood of hospitalization in breast cancer survivors.
- Depression is associated with an increased likelihood of hospitalization in breast cancer survivors.
- Early and effective intervention for menopausal and depressive symptoms among women after treatment for breast cancer may reduce the likelihood of unnecessary hospitalization.

services utilization, and the most costly form of utilization, hospitalization. Healthcare utilization is influenced by a number of factors, including those related to sociodemographics, coexisting clinical conditions, and healthcare system features, and often is categorized in reference to the reason a person seeks care (i.e., primary, secondary, or tertiary prevention) (Andersen, 1995; Andersen, Chen, Aday, & Cornelius, 1987; Mechanic, 1978, 1995; Oleske, 2001). Healthcare utilization rates can be measures of need to which healthcare services should be targeted. High utilization rates could mean unmet needs or problems with the quality of care rendered (e.g., high postmastectomy wound infection rates); low utilization rates could mean lack of adequate health care (e.g., low breast-

With the increasing efficacy of treatment, growing attention has focused on nontumor-related health outcomes for women with breast cancer. Health outcomes represent the end results of interventions and include health status, quality of life, functional ability, and mental status. Service use (e.g., hospitalization, readmission) is another type of health outcome and refers to the type and purpose of healthcare services rendered (Iezzoni, 1994). Categories of healthcare service utilization could include physician or other healthcare provider services, hospitalizations, prescriptions, or even medical devices (e.g., rehabilitation equipment). The study of the impact of cancer survivorship must extend to the understanding of another important outcome, healthcare

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