

Factors Related to Persistent Fatigue Following Completion of Breast Cancer Treatment

Céline Gélinas, RN, MSc, PhD(c), and Lise Fillion, RN, PhD

Purpose/Objectives: To verify the predictive capacity of the stress-process theory to explain persistent fatigue following completion of breast cancer treatments; to verify the relationship between interleukin-1 β and fatigue.

Design: Correlational.

Setting: Tertiary medical center in Quebec City, Canada.

Sample: A systematic sample of 103 women in remission from breast cancer was recruited. The mean age was 54 years. Participants with a depressive mood, insomnia, or stage IV cancer were excluded.

Methods: Participants were met during their follow-up appointment after the end of radiation therapy. Questionnaires on fatigue, stress variables, and other confounding variables were completed by telephone interview. Blood samples also were collected to measure the serum level of interleukin-1 β .

Main Research Variables: Fatigue, several variables from the stress-process theory, pain, menopausal symptoms, and demographic and medical variables.

Findings: Fatigue was related theoretically and coherently to many stress-process variables. By controlling for pain, the final regression model included cancer stressors and passive and active coping as predictors, which accounted for 41% of the variance in fatigue. No relationship was found between fatigue and interleukin-1 β .

Conclusions: The results supported the relevance of the stress-process theory for explaining cancer-related fatigue.

Implications for Nursing: Nursing interventions based on this theoretical framework could be developed. In addition, further clinical research that tests the efficacy of these psycho-educative interventions in preventing persistent fatigue and improving the quality of life of women with breast cancer is recommended.

Key Points . . .

- ▶ Persistent fatigue may be observed even several years after completion of breast cancer treatments.
- ▶ Cancer-related stressors and passive coping strategies are associated with fatigue.
- ▶ Stress and coping psychoeducational interventions may be a way to prevent fatigue.

Garssen, Schuster-Uitterhoeve, et al., 1998; Vogelzang et al., 1997; Woo, Dibble, Piper, Keating, & Weiss, 1998).

Persistent fatigue may compromise patients' quality of life (Bower et al., 2000; Shimozuma et al., 1999; Smets, Visser, Willems-Groot, Garssen, Schuster-Uitterhoeve, et al., 1998; Vogelzang et al., 1997). Research still is needed to document fatigue-related factors and to eventually alleviate this symptom or prevent it from occurring. This study has been conducted to contribute to the knowledge base in this area.

Fatigue is a general feeling of decreased energy that can be associated with difficulty concentrating, decreased motivation, and decreased physical activity (Cimprich, 1992; Irvine, Vincent, Graydon, Bubela, & Thompson, 1994; Pearce & Richardson, 1996; Richardson & Ream, 1997; Stone, Richards, & Hardy, 1998). Cancer-related fatigue (CRF) can be defined as a multidimensional phenomenon that includes physical, emotional, cognitive, and behavioral components (Smets, Garssen, Bonke, & de Haes, 1995).

Although several studies have documented the factors associated with CRF during medical treatments (Broeckel, Jacobsen, Horton, Balducci, & Lyman, 1998; Cella, 1998; Fillion & Gagnon, 1998; Gaston-Johansson, Fall-Dickson, Bakos, & Kennedy, 1999; Greenberg, Gray, Mannix, Eisenthal, & Carey, 1993; Irvine et al., 1994; Irvine, Vincent, Graydon, & Bubela, 1998; Jacobsen & Stein, 1999; Pearce &

Cancer now represents the second largest cause of mortality and an important cause of morbidity in North America. Breast cancer is the most widespread type of cancer in women in Canada. A total of 21,100 new cases of breast cancer occurred in Canada in 2003 (National Cancer Institute of Canada, 2003).

Fortunately, more patients are in remission from cancer, mainly because of early detection and important advances in treatment. Nevertheless, cancer treatments may have a number of side effects that have negative impacts on quality of life (Berglund, Bolund, Fornander, Rutqvist, & Sjöden, 1991; Ferrell, Dow, Leigh, Ly, & Gulasekaram, 1995). Among potential side effects, fatigue is reported by patients with cancer as the most frequent symptom, with a prevalence greater than 75% (Foltz, Gaines, & Gullatte, 1996; Greenberg, Sawicka, Eisenthal, & Ross, 1992). Long after the treatments have ended, more than 50% of patients with cancer still complain of persistent fatigue (Andrykowski, Curran, & Lightner, 1998; Jacobsen & Stein, 1999; Okuyama et al., 2000; Shimozuma, Ganz, Petersen, & Hirji, 1999; Smets, Visser, Willems-Groot,

Céline Gélinas, RN, MSc, PhD(c), is a doctoral candidate in the Faculty of Nursing at Laval University and Lise Fillion, RN, PhD, is an associate professor in the Faculty of Nursing and a researcher in the Cancer Research Center, CHUQ, Hôtel-Dieu de Québec, of Laval University, as well as a team member in the Palliative Care Research Center of Maison Michel Sarrazin, all in Quebec City, Canada. This research was supported by an Ordre des Infirmières et Infirmiers du Québec nursing research award for the first author's master's degree and a research grant to the second author. (Submitted November 2002. Accepted for publication April 30, 2003.)

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