

# Time Since Diagnosis as a Predictor of Symptoms, Depression, Cognition, Social Concerns, Perceived Benefits, and Overall Health in Cancer Survivors

Jill A. Bennett, PhD, RN, Linda D. Cameron, PhD, Paul M. Brown, PhD, Lisa C. Whitehead, PhD, David Porter, MBChB, MD, Tanja Ottaway-Parkes, MA, and Elizabeth Robinson, PhD

**W**orldwide, 10.9 million people are diagnosed with cancer each year and 6.7 million will die from the disease (Cancer Research UK, 2008). Although the incidence of cancer is expected to rise in the next 10 years as the world population ages, advances in cancer treatments are likely to increase the number of patients with cancer who become long-term survivors. Patients are considered survivors from the day of diagnosis (National Cancer Policy Board, 2006), but stages of survivorship differ: some are undergoing cancer treatment, some are transitioning from treatment to the first years of life after cancer (short term), some are more than five years beyond their cancer diagnosis (long term), and some are more than 10 years beyond diagnosis (very long term).

Many long-term effects of adult-onset cancers and cancer treatments are poorly documented and understood, even five years after treatment (Aziz & Rowland, 2003; Fossa, Vassilopoulou-Sellin, & Dahl, 2008; National Cancer Policy Board, 2006; Pollack et al., 2005; Yabroff, Lawrence, Clauser, Davis, & Brown, 2004). Findings from cross-sectional studies (Dow, Ferrell, Leigh, Ly, & Gulasekaram, 1996; Kornblith et al., 2003) suggest that long-term survivors of breast cancer report lymphedema, numbness, sexual issues, and psychologic distress as many as 20 years after diagnosis. However, health and quality of life (QOL) are generally good. Similarly, in a study by Bush, Haberman, Donaldson, and Sullivan (1995), 125 survivors more than 10 years after bone marrow transplantation reported bothersome symptoms such as fatigue and sexual dysfunction; however, 95% of the survivors had a good QOL. Lastly, a study of 1,823 cancer survivors and age-, sex-, and education-matched comparison subjects by Yabroff et al. (2004) reported poorer health and more lost work days for cancer survivors, regardless of type of cancer, suggesting that some adverse health effects may be

**Purpose/Objectives:** To assess whether health and other factors are different in short-term cancer survivors (less than five years since diagnosis), long-term survivors (5–10 years), and very long-term survivors (more than 10 years).

**Design:** A cross-sectional survey.

**Setting:** New Zealand.

**Sample:** 836 survivors of adult-onset cancers (6 months to 43 years since diagnosis).

**Methods:** Survivors were recruited using community-based methods and answered a mailed questionnaire.

**Main Research Variables:** Physical and emotional health, depression, symptoms, cognitive difficulty, social concerns, and perceived benefits of cancer.

**Findings:** Physical and emotional health, depression, physical symptoms, and perceived benefits of cancer were not associated with time since diagnosis, but longer time since diagnosis was associated with decreases in cognitive difficulties and social concerns. The survivors in this study reported a mean of 8.4 physical symptoms, regardless of time since diagnosis, with the most frequent being fatigue (76%), aches and pain (75%), and trouble sleeping (68%).

**Conclusions:** Most survivors enjoyed a moderately good level of health. However, some adverse effects, such as symptoms, were similar in short-, long-, and very long-term survivors, suggesting that interventions may be needed to prevent persistent issues as time progresses.

**Implications for Nursing:** The findings suggest a need to reconsider the common attitude that survivors who finish treatment should be able to return to normal life. Assessment of symptoms, particularly fatigue, pain, and sleep issues, is important even in very long-term survivors.

common in survivors rather than related to treatment or cancer type. These findings raise the possibility that interventions and guidelines could be developed that would be generally useful for survivors of all cancers. Therefore, studying cancer survivorship in all phases is important because it still is unknown whether different physical and psychologic issues may arise at different