Exercise and the Breast Cancer Survivor: The Role of the Nurse Practitioner

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Background: Patients with cancer are living longer with their disease and have improved survival rates because of early detection and more effective cancer treatments. Lifestyle modification and exercise improve clinical outcomes in breast cancer survivors.

Objectives: Exercise has important implications for the survivor and should be integrated into the aftercare trajectory of survivorship.

Methods: A literature review of articles published from 2002–2014 was conducted using the key words cancer survivor, survivorship, breast cancer, collaboration, and exercise. PubMed, Cochrane Database of Systematic Reviews, and CINAHL® databases were searched.

Findings: Nurse practitioners can build an environment to motivate patients to exercise, empowering them to be active participants in their own survivorship care. Collaboration is necessary to ensure that healthy lifestyle choices, including exercise, are being discussed and implemented in survivorship care plans to help optimize patient outcomes.

Nurse practitioners (NPs) are key figures in the coordination and collaboration of cancer survivorship care. They can bridge the gap and ensure coordination of care between cancer specialists and primary care providers (PCPs) to ensure quality care once active treatment is completed. Survivors often encounter changes in physical activity along with anxiety and depression, fear of cancer recurrence, and increased risk for chronic conditions (Cooper, Loeb, & Smith, 2010; de Moor et al., 2013; Ellsworth, Valente, Shrimer, Bittman, & Ellsworth, 2012). Lifestyle modifications and exercise can improve clinical outcomes in the breast cancer survivor, and NPs are integral to build environments motivating patients to exercise and supporting them in their choice of exercise. This article examines the background of cancer survivorship, exercise and its importance in breast cancer, and the coordination and collaboration of breast cancer survivors through survivorship care plans (SCPs).

Background

Early detection of cancer and its treatment has made an impact on patients’ outcomes (National Cancer Institute [NCI], n.d.; Parry, Kent, Mariotto, Alfano, & Rowland, 2011). Based on data gathered from 2006–2010 (NCI, n.d.), roughly 41% of men and women will be diagnosed with some kind of cancer during their lifetime. The American Cancer Society ([ACS], 2015) reports that breast cancer is the most common cancer in women, with an incidence of one in eight. ACS (2015) estimates that 231,840 women will be diagnosed with invasive breast cancer in 2015, and more than 40,000 will die. More than 2.8 million women in the United States are breast cancer survivors (ACS, 2015).

This increase in cancer diagnoses during the lifespans of survivors is attributed to improved survivorship rates, resulting from advances in early detection and improved cancer treatment and the increase in the average age of the population (Parry et al., 2011). Cancer incidence increases with age, leading to a larger portion of the general population diagnosed with cancer. An estimated 66% of cancer survivors will be 65 years or older by 2020 (de Moor et al., 2013).

In 2005, the Institute of Medicine (IOM) report, From Cancer Patient to Cancer Survivor: Lost in Transition, found gaps in the coordination of care in the post-treatment phase of the cancer care trajectory (Hewitt, Greenfield, & Stovall, 2005). The
Exercise

Exercise is an important aspect to survivorship. Loprinzi, Bradley, Winters-Stone, Smit, and Loprinzi (2012) reviewed six studies to examined the association of physical activity and breast cancer death and recurrence. Four of the studies showed that exercise had a protective effect, whereas the remaining two studies revealed an insignificant reduction of risk. Returning to normal activity and beginning exercise as soon as possible after breast cancer surgery was recommended by the authors. In addition, during chemotherapy and radiation, it was recommended that patients continue with their normal daily activities and exercise, as tolerated, with adjustments as needed for the acute effects from the treatment. In the post-treatment phase, a minimum of 150–180 minutes of moderate to intense exercise per week was needed to reduce risk of breast cancer recurrence. Findings showed that 43% were less likely to have recurrence, and 50% were less likely to die than those who engaged in one hour or less of physical activity per week (Holmes, Chen, Feskanich, Kroenke, & Colditz, 2005). NPs should encourage regular exercise by engaging patients in conversation with active listening and reflection.

In addition, the study revealed the importance of physical activity to breast cancer survival. Results from the Nurse’s Health Study (Holmes et al., 2005) provided evidence that any exercise over three metabolic equivalent task (MET) hours per week (equivalent to walking 2–3 miles per hour for one hour) results in a survival advantage (Ellsworth et al., 2012; Holmes et al., 2005). In the United Kingdom, a report from the Chief Medical Officer recommended at least 30 minutes of moderate activity per day for five or more days per week for healthy living (Department of Health, 2004). However, the British Association of Surgical Oncology guidelines do not include lifestyle recommendations for breast cancer management (Carmichael, Daley, Rea, & Bowden, 2010). In addition, a study of breast specialty surgeons and oncologists showed that only 43% advise patients to exercise (Daley, Bowden, Rea, Billingham, & Carmichael, 2008).

Studies have repeatedly shown that regular exercise is a cornerstone for primary and secondary disease prevention in many clinical settings (Betof, Dewhirst, & Jones, 2012). In patients with adult-onset type 2 diabetes mellitus, exercise and lifestyle changes have also shown to improve outcomes (Dombrowski, Fitzpatrick, Hall-Alston, Barnes, & Singleton, 2014). Obesity is associated with cancer recurrence, a shorter disease-free survival, shorter overall survival, and treatment failure in patients with breast cancer (Ellsworth et al., 2012). Exercise has gained approval as a concurrent therapy with prescribed anti-cancer treatment during the post-cancer diagnosis phase (Betof et al., 2012). Nelson (2012) noted that postmenopausal breast cancer, obesity, and inactivity are associated with a higher incidence and poorer outcomes among patients with a history of breast cancer. Studies suggest that weight loss and increased physical activity reduce the risk of breast cancer death and cancer recurrence (Holmes et al., 2005). In addition, after the cancer treatments are finished, healthy lifestyle habits continue to reduce risk of recurrence, as well as the risk for other illnesses (Jones & Demark-Wahnefried, 2006). The impact of healthy diet and regular exercise may contribute to reducing the risk of these comorbid conditions (Davies, Batehup, & Thomas, 2011).
Although physical activity has demonstrated positive effects on breast cancer survival, data suggest that physical activity levels decrease an average of 11% after diagnosis (Irwin et al., 2003). This equates to a two-hour loss of activity during home chores or sports activities per week. In Irwin et al. (2004) only 32% of breast cancer survivors achieved the recommended 150 minutes per week of moderate to intense activity. The American Cancer Society’s Studies of Cancer Survivors–III (SCS-III) cohort showed that only 37% of women met physical activity recommendations (Blanchard, Courneya, & Stein, 2008). In a Canadian study, less than 22% of cancer survivors engaged in adequate levels of exercise (Courneya, Katzmarzyk, & Bacon, 2008). Another study by Hair, Hayes, Tse, Bell, and Olshan (2014) looked at racial differences in physical activity among breast cancer survivors. Thirty-five percent of the participants met current activity guidelines after a breast cancer diagnosis. Racial differences in the prediagnosis activity with African American women revealed lower levels compared to Caucasian women and a larger decrease in activity between prediagnosis and postdiagnosis. African Americans undergoing chemotherapy or radiation therapy (RT) were found to be significantly associated with postdiagnosis activity (p < 0.01), and those getting chemotherapy only and those not receiving chemotherapy or RT exercised the least. African American women with no prior comorbidities showed a decrease in exercise postdiagnosis (p < 0.04) compared to those with comorbidities. In addition, African American women with higher incomes demonstrated a decrease in activity (p < 0.06) compared to African American women of lower income (Hair et al., 2014); however, this level was not statistically significant. The results from these studies suggest that decreased physical activity in survivors is a widespread problem that requires interventions on many levels.

Implications and Types of Exercise

The implications for exercise in breast cancer survivors include the need for reconditioning of physical functioning, strengthening, flexibility, and body image, which leads to improved quality of life and the ability to endure the psychological and physical long-term and late effects from the cancer treatment. Patient-centered exercise programs should vary depending on age and race of the patient (related to cultural norms, types of programs available, and cost, all of which can affect disparities), stage of disease, presence of comorbidities, baseline performance status, and past experiences with exercise. This allows a tailored approach and gives the patient a sense of individuality that is customized to the patient’s desires and needs. Various types of exercise should be considered, such as regular aerobic exercise (which includes group exercise, home exercise, walking, or bicycling), resistance training, and specialties, such as Pilates, tai chi, and yoga (Eyigor & Kanyilmaz, 2014). Incorporating a patient-centered, integrative medicine approach gives patients control and allows them to be active participants in their care (Mao & Cohen, 2014).

These programs can be implemented as supervised, individual one-on-one exercise sessions, community-based exercise classes, or home-based exercise. Home-based exercise interventions have been shown to be cost effective and demonstrate better patient adherence (Ashworth, Chad, Harrison, Reeder, & Marshal, 2005). These interventions include personal counseling with an exercise specialist, use of a pedometer, patient counseling by the NP aimed at creating an environment for motivation, telephone follow-up calls, and patient education on exercise and health for breast cancer survivors (Carmichael et al., 2010). In addition, exercise coupled with follow-up support has a positive effect on adherence to these programs (Dombrowski et al., 2014).

Coordination and Collaboration of Care

As cancer survivors transition from specialized oncology care to primary care, greater coordination and collaboration of care are required during follow-up (McCabe, Bhatia, et al., 2013). An SCP can be seen as a roadmap to quality care. The IOM recommendations are, as outlined in Implementing Survivorship Care Planning (Hewitt & Ganz, 2007), to have an SCP and TS completed by oncology providers and shared with PCPs. These also should incorporate essential components and resources for follow-up care, including psychosocial support and general health and wellness information. A timeline for a patient’s follow-up care listing the appropriate collaborative efforts of the entire healthcare team should be included in the plan. Sources for breast cancer SCPs can be found in Figure 1.

The essential components of a SCP include surveillance, screening, assessment and management of the sequelae of cancer and its treatment, health promotion, and coordination of care. The latter includes coordination among healthcare professionals that allows for improved communication among care providers, including family caregivers. Including the patient and family caregivers as integral members of the team keeps them informed and empowered (Ganz, Casillas, & Hahn, 2008). NP collaborative efforts may promote multidisciplinary team coordination, which ensures that mutually set goals are being met.

The TS and SCP can be reviewed and discussed during the survivorship clinic visit. The coordinating NP is responsible for completing the TS prior to the visit, and the SCP includes ASCO guidelines for follow-up care, along with the NP’s recommendations that are necessary when completing active treatment. During the visit, the NP will assess for what the survivor’s goals and concerns are and incorporate them into the SCP by mutually

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**Figure 1**. Breast Cancer Survivorship Care Plan (SCP) Resources

- **American Society of Clinical Oncology (ASCO)**
  - Breast cancer survivorship plan
  - [Journey Forward SCP builder user guide](http://bit.ly/1iwK4mz)
  - [SCP template](http://bit.ly/1KDRaC2)

- **Livestrong Foundation**
  - Care plan and treatment summary templates
    - [www.livestrongcareplan.org](http://www.livestrongcareplan.org)

- **National Cancer Institute Community Cancer Centers Program (NCCCP)**
  - NCCCP-ASCO Breast Cancer SCP
    - [http://NCCCP-ASCO-Breast-Cancer-Survivorship-Care-Plan](http://NCCCP-ASCO-Breast-Cancer-Survivorship-Care-Plan)
setting new goals, recommendations, and referrals as needed. This will be forwarded to the multidisciplinary team members for follow-up care. Through support and education facilitated by the NP, the survivor can choose healthy lifestyles and exercise and incorporate these recommendations into the SCP.

### Nurse Practitioner Role

Oncology clinics can be confronted with the challenge of a busy practice because of the decreased supply of and increased demand for oncologists coupled with an increase in the number of survivors. The NP can facilitate and coordinate multidisciplinary teams to plan and implement SCPs. The SCP encourages collaboration among the NP, the physician, the survivor, his or her family, and caregivers (Miller, 2008). For example, a breast cancer–specific plan provides an NP- and physician-supported, patient-centered and -coordinated care model. It requires collaboration between NPs and physicians, including oncologists, PCP, and integrative services to understand the needs of survivors along with their current self-management strategies. Expected elements of the care will be personalized for the survivor and communicated with the team (Miller, 2008).

According to McCabe, Bhatia, et al. (2013), the PCP must be integrated into the SCP. McCabe, Bhatia, et al. (2013) reported that prevention and screening services for the survivor are kept up to date when being seen by a cancer provider and a PCP as compared to just one provider. The emphasis is on having combined support through communication and collaboration between the cancer team and the PCP. Both types of healthcare providers are important in the long-term care of the cancer survivor, with NPs as key figures to facilitate the ongoing collaborative care continuum within the oncology practice and the primary care practice (McCabe, Faithfull, Makin, & Wengstrom, 2013).

The continuity of care is magnified intraprofessionally through an NP-led survivorship clinic when primary care NPs and oncology NPs are involved in the care of survivors (Cooper et al., 2010). Oncology NPs in the survivorship practice role may assume other cancer-related roles, such as the cancer specialist, educator, researcher, and consultant. The consultant can expand interprofessionally across settings, such as radiation oncology clinics, surgical oncology departments, hospitals, outpatient centers, integrative medicine, and primary care (Cooper et al., 2010). The collaborating NP may identify individual problems the survivor may be experiencing, such as complaints of fatigue, neuropathies, hot flashes, weight gain, or taste changes, and refer to sub specialties for physical rehabilitation, acupuncture, massage therapy, or a nutritionist for appropriate support. The SCP will be personalized for the survivor and family to be active participants in their care after the treatment phase.

### Conclusion

The aging population, early detection, and improved cancer treatments have increased the number of people living with a cancer diagnosis. Hewitt et al. (2005) found gaps in the coordination of care in the post-treatment phase of the cancer continuum. SCPs are a way to bridge the gap, and NPs are integral facilitators in the coordination of care through a multidisciplinary team approach. Exercise has a positive impact on breast cancer survivors and should be a key component of an SCP. Exercise is effective in diminishing the adverse effects of the treatments, disease progression, and recurrences, as well as warding off chronic conditions, such as diabetes, hypertension, heart disease, and other new cancers (Betof et al., 2012; Davies et al., 2011). A patient-centered coordination and collaboration of care is necessary to ensure healthy lifestyles with exercise as part of the SCP for breast cancer survivors.

### References


### Implications for Practice

- Facilitate the collaboration of multidisciplinary team members to ensure coordination of care for the breast cancer survivor.
- Have the survivor and family participate with the team by setting new goals for the new cancer phase.
- Integrate three metabolic equivalent task hours per week into the breast cancer survivor’s post-treatment trajectory to improve morbidity and mortality outcomes.