Transitioning Patients to Survivorship Care: A Systematic Review

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Cancer survivorship is increasingly prevalent in the United States with more than 12.5 million individuals living with a history of cancer (National Cancer Institute, 2010). The overall cancer mortality rates have decreased since 2001–2002, and the increasing survival rates may be because of earlier diagnoses and treatment advances (Siegel, Naishadham, & Jemal, 2012). By combining the growth in the United States’ aging population with an increased risk of cancer as individuals age, the number of cancer survivors is projected to increase to 18 million by 2022 (de Moor et al., 2013). Cancer survivors are often left with residual physical and psychological effects of the disease as well as needs for continued preventive care (Hewitt, Greenfield, & Stovall, 2005). The increase in the number of cancer survivors expected within the next decades will place a great burden on the healthcare system. However, the research to inform evidence-based follow-up care for cancer survivors is in its infancy (McCabe et al., 2013).

In response to the growing numbers and needs of cancer survivors, efforts have been made by public and private organizations to address the structure of survivorship care. A seminal report on cancer survivorship care was published in 2005 by Institute of Medicine (IOM). With the release of From Cancer Patient to Cancer Survivor: Lost in Transition, the IOM proposed the core components of survivorship care, including prevention, surveillance, and detection of new cancers or recurrent cancer and late effects; intervention for late effects; and coordination of care between specialists and primary care providers (Hewitt et al., 2005). Other organizations have issued publications and guidelines addressing the issue of survivorship care, including the Centers for Disease Control and Prevention (CDC), the Lance Armstrong Foundation (Livestrong), the Commission on Cancer (CoC), and the National Comprehensive Cancer Network (NCCN). Common themes among these publications include prevention, survivors’ well-being, resource access, care coordination through post-treatment summaries or survivorship care plans, psychosocial needs of survivors, education, and management of the side effects and late effects of cancer and its treatment (American College of Surgeons, 2012; CDC, 2004; Livestrong, 2010; NCCN, 2013). Nevertheless, the IOM report remains the defining influence for survivorship care and will be used as the theoretical basis for evaluating articles in the current review.

The IOM report discussed several models of care, including a shared care model between primary care and...
oncology, a nurse-led model, and a multidisciplinary survivorship follow-up clinic (Hewitt et al., 2005). Studies have addressed these models of care, but no studies to date have illustrated that one specific model of care is superior in improving patient outcomes (Aziz, Oeffinger, Brooks, & Turoff, 2006; Beaver et al., 2012; Casillas et al., 2011; Landier, 2009; McCabe et al., 2013). Howell et al. (2012) performed a systematic review on survivorship care interventions and guidelines. Although this review provides important insight into different models for delivering survivorship care, the extent to which the IOM purposes and guidelines are incorporated into survivorship care interventions and associated patient outcomes was not evaluated.

A survivorship care plan is intended to provide patients with information about their cancer, treatment, possible late effects, needed follow-up, preventive health measures, legal protection for employment and insurance, and referral sources for psychosocial needs (Hewitt et al., 2005). This information should be provided directly to survivors and primary care providers to support survivor transition to follow-up care. A number of organizations have adopted this recommendation and posted web-based survivorship care plan education and forms for survivors and their providers to use for tracking post-cancer care including, but not limited to, the National Coalition for Cancer Survivorship, the American Cancer Society in collaboration with the Oncology Nursing Society, the American Society of Clinical Oncology, and the Livestrong Foundation (American Cancer Society, 2013). The information posted and the forms provided by the sites vary, but each includes the central IOM concepts of a post-treatment summary, potential late effects, and resource access.

Nonexperimental studies such as Forsythe et al. (2013) have found correlations between the provision of survivorship care plans and improved care delivery. However, evidence to support the use of a survivorship care plan is inconclusive (McCabe et al., 2013). The message to providers regarding the use of survivorship care plans remains unclear. For example, the NCCN does not directly mandate the use of a survivorship care plan, whereas the CoC does mandate that to receive accreditation status, organizations must be in compliance with providing survivorship care plans to their patients by 2015 (American College of Surgeons, 2012; NCCN, 2013). Implementation of survivorship care plans is also inconsistent. Tompkins Stricker et al. (2011) found that none of the Livestrong Network of Survivorship Centers of Excellence in their study achieved 75% or greater concordance with the IOM’s recommendations for treatment summaries and only 2 of 13 met this criterion for survivorship care plans.

Although studies have evaluated survivorship care plans, few have directly measured how their use affects patient outcomes when providers are included in educating survivors regarding the survivorship care plan (Faul et al., 2012; Hill-Kayser, Vachari, Hampshire, Jacobs, & Metz, 2009). This is a key concept as provider-mediated education impacts patient outcomes (Jack et al., 2009). For survivorship interventions to meet guidelines for survivorship care, research-driven survivorship care interventions need to reflect the purposes of survivorship care and the recommendations from the IOM report. With the advent of the Patient Protection and Affordable Care Act, a need exists for care measures that are cost-effective and patient-centered, particularly for chronic conditions such as cancer (H.R. 3590, 2009; McCabe et al., 2013). Therefore, the purpose of this review is to evaluate the evidence surrounding provider-mediated interventions aimed at the transition of patients with cancer from active treatment to follow-up care. The questions guiding this review follow: (a) Are studies evaluating provider-mediated survivorship care interventions consistent with the purposes of survivorship care outlined in the IOM report and the provision of a survivorship care plan? and (b) What are the outcomes associated with provider-mediated cancer survivorship interventions?

Methods

Search Strategy and Data Sources

Systematic literature searches were performed using PubMed, CINAHL®, and the Cochrane Database. The search terms used for PubMed were survivors AND neoplasms AND patient care planning OR survivors AND neoplasms AND continuity of patient care OR survivors AND neoplasms AND clinic or care plan with search limits of 2005–2013. The search terms used for CINAHL were cancer survivors and program development OR cancer survivors and patient care plans OR cancer survivors and continuity of patient care with search limits of 2005–2013. The search terms used for the Cochrane Database were cancer survivor follow-up and survivorship care plans AND cancer survivor follow-up and survivorship clinics. Ancestry searches, performed from the reference lists of retrieved articles, revealed one additional article. Relevant related studies, identified through PubMed, were also reviewed with the addition of one article. Figure 1 outlines the search strategy.

Inclusion and Exclusion Criteria

To focus on a broad range of intervention studies published after the IOM report, articles included in this review were published since 2005, had cancer survivors as participants, used experimental or quasi-experimental methodology to address intervention
implementation, studied an intervention that addresses care after primary cancer treatment, and used a physician, nurse, nurse practitioner, or physician’s assistant to administer the intervention. Articles were excluded from the review if participants were receiving treatment for recurrence at the time of enrollment, the intervention was delivered in a nonclinical setting, the article was not written in English, or the intervention focused on resolution or treatment of one diagnosis rather than comprehensive survivorship care.

**Study Selection and Characteristics**

A total of 606 articles were obtained from database searching, with two articles added manually based on ancestry searching and relevant articles identified through PubMed. Articles’ titles, abstracts, methods, and/or results sections were reviewed based on the inclusion and exclusion criteria. A total of 16 articles were screened for final eligibility. After review of the full article, seven were excluded.

**Results**

The nine articles identified for inclusion are described in Table 1. Specifically, the intervention, study type, participant type, and outcomes are listed. Table 2 is a quick reference highlighting the inclusion of major IOM principles and recommendations found in each article.

**The Intervention**

The study interventions in this review varied in the model of care delivery from shared care between a primary care provider and oncologist to specialist-led care, primary care provider–led care, nurse-led care, or care in a specialty survivorship clinic. Two of the nine studies described care using a shared care model between a specialty survivorship clinic and community family physicians (Blaauwbroek, Tuinier, Meyboom-de Jong, Kamps, & Postma, 2012; Blaauwbroek et al., 2012). Brothers, Easley, Salani, and Andersen (2013) used an oncology-led intervention, whereas Grunfeld et al. (2006, 2011) and Wachtow et al. (2006) used a primary care provider–led model. Two studies focused on a nurse-led model of survivorship care (Curcio, Lambe, Schneider, & Khan, 2012; Jefford et al., 2011), and one study used a specialized survivorship clinic as the model for their intervention (Wheelock et al., 2013).

Very few similarities existed across the interventions in the studies reviewed. Specifically, some studies simply addressed the use of a survivorship care plan (Brothers et al., 2013; Grunfeld et al., 2011) or another...
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<th>Study</th>
<th>Methods and Participants</th>
<th>Intervention</th>
<th>Outcomes</th>
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<td>Blauuwbroek et al., 2008</td>
<td>Cohort study Adult survivors of childhood cancer and family physicians; used Dutch reference group for controls</td>
<td>Survivors had a clinical and physical assessment with a family doctor at the long-term follow-up at time 1, and late effects were graded. A follow-up visit was done a year later at time 2 by local family doctors who were given information about follow-up screenings. At time 3, survivors were given advice on long-term follow-up based on their risk from the long-term follow-up family physician.</td>
<td>At time 2, 82% of family physicians believed the information about patient history, health risks, and necessary tests from the long-term follow-up clinic was adequate to perform screening. Fourteen percent of survivors felt their family physicians’ knowledge was inadequate. Survivors had significantly lower health-related QOL scores than population controls for physical functioning ($p = 0.011$), social functioning ($p = 0.027$), vitality ($p = 0.005$), and general health perceptions ($p = 0.0001$) at time 1, and these did not change with the intervention at time 3. Before time 1, 70% of survivors had not received information about the possibility of late effects. At time 1, 53% of survivors had mild late effects, and 40% had moderate to severe late effects; 70% had two or more late effects, and 31% were diagnosed with previously unknown late effects that required treatment. Nine percent of late effects were a second malignant tumor, with five survivors having a previously undiagnosed secondary cancer. At time 2, 88% of survivors were satisfied with the care given by family physicians; at time 2, 82% of family doctors were satisfied with shared care.</td>
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<td>Blauuwbroek et al., 2012</td>
<td>Cohort study Adult survivors of childhood cancer and their family physicians</td>
<td>Survivors received an information letter about the risks related to late effects and the need for long-term follow-up. Two weeks later, pediatric oncologists contacted them by phone regarding follow-up by a family physician and the details of an online SCP. For survivors and family physicians who were willing to participate, a personalized SCP was constructed with the patient’s cancer and treatment history, risk for late effects, follow-up recommendations, and advice about a healthy lifestyle. An SCP was provided to survivors and their family physicians electronically, and survivors were given a printed version. Survivors were asked to make an appointment with their family physician.</td>
<td>Survivors (96%) found the SCP user-friendly, 73% believed their knowledge of late effects had improved with the SCP, and 97% had become more aware of the benefits of follow-up; 11% felt the information in the SCP was inadequate. Almost all of the family physicians (97%) found the SCP to be user-friendly, 83% felt their knowledge of late effects had improved, and 95% felt their awareness of the benefits of follow-up had improved. Ten percent of survivors had a second malignancy; 16% of survivors had no late effects, 60% had two or more late effects, and 43% had severe grade late effects. Eighty-three percent of family doctors performed the patient screenings according to Dutch guidelines and 93% felt they could perform follow-up care if the SCP was available. Eighty-two percent of survivors had confidence in the competence of their family physician to perform the patient screening.</td>
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<td>Brothers et al., 2013</td>
<td>Randomized, cross-sectional design Cancer survivors</td>
<td>For those in the treatment group, an SCP was provided that contained a treatment summary, risk for late effects, cancer screening recommendations, healthy lifestyle information, cancer screening recommendations, psychosocial concerns, and cancer prevention tips. The SCP was delivered to the treatment group and reviewed by the oncology physicians. Physicians recommended that the patient share the information with other healthcare professionals and follow-up with questions after reviewing the information.</td>
<td>No differences existed between conditions when patients rated administrative services ($F = 0.205$, $p = 0.67$), clinical services ($F = 0.991$, $p = 0.368$), helpfulness of written materials ($F = 0.549$, $p = 0.495$), educational services ($F = 0.566$, $p = 0.492$) and likelihood of recommending the clinic ($F = 2.188$, $p = 0.192$).</td>
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ASCO—American Society of Clinical Oncology; CI—confidence interval; HADS—Hospital Anxiety and Depression Scale; NCCN—National Comprehensive Cancer Network; PCP—primary care physician; QOL—quality of life; SCP—survivorship care plan

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<td>Curcio et al., 2012</td>
<td>Pre and post-test design, Cancer survivors</td>
<td>The survivorship protocol involved a one-hour visit after patients had completed active treatment to review the care plan and answer questions. An individualized SCP was developed collaboratively with a nurse practitioner, medical oncologist, and RNs using the ASCO template, which has the cancer treatment, recommended follow-up, health maintenance recommendations, signs of recurrence, secondary cancer risk, and side effects and late effects. A copy of the SCP was given to the patient and PCP. A follow-up telephone call occurred one month after the visit to answer questions.</td>
<td>Survivor knowledge trended upward (no significance testing) for knowledge of late effects, chemotherapy regimen, cancer stage, potential late side effects, signs of recurrence or secondary cancers, and recommended follow-up. Four survivors wanted additional information about individual recurrence risk, four for smoking cessation, two for genetic counseling and testing, and two for support group referrals. Patient participants were highly satisfied (23 of 30) with the survivorship protocol. All PCPs agreed that the SCP improved communication. Follow-up frequency of patient participants was consistent with NCCN guidelines. Patient paired t test for anxiety scores from baseline to time 1 (4.6, p &lt; 0.05)</td>
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<td>Grunfeld et al., 2006</td>
<td>Randomized trial, Breast cancer survivors</td>
<td>The usual care group received follow-up care in the cancer center, and the family physician group received follow-up care from a family physician. The family physician was given a guideline with follow-up recommendations for physical examination and history every three to six months for three years, every six months for two years, and then yearly as mammograms yearly, surveillance for recurrence, and care for those on tamoxifen. All patients were transferred to primary care for follow-up. All patients had a standard discharge visit, and patients and PCPs were instructed to schedule follow-up in three months with primary care while still having access to supportive care at the cancer center. Patients in the intervention group received an SCP that included a treatment summary, Canadian follow-up guidelines, a summary table of guidelines for reminders, and a resource kit for supportive care. The documents were compiled in a binder and were reviewed with the patient during a 30-minute educational session with a nurse. The nurse stated that the PCP was responsible for primary follow-up. The SCP was also sent to the PCP with the full follow-up guidelines.</td>
<td>No statistically significant differences existed in the number of patients with serious clinical events (17 versus 18, 95% CI [2.26, 2.65] or QOL scores as measured by the Short Form-36 and HADS between the groups). The family physician group had 54 recurrences and 29 deaths, whereas the usual care group had 64 recurrences and 30 deaths (95% CI for both, [–2.13, 6.16] and [–2.9, 3.26], respectively).</td>
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<td>Grunfeld et al., 2011</td>
<td>Randomized trial, Breast cancer survivors</td>
<td>All patients were transferred to primary care for follow-up. All patients had a standard discharge visit, and patients and PCPs were instructed to schedule follow-up in three months with primary care while still having access to supportive care at the cancer center. Patients in the intervention group received an SCP that included a treatment summary, Canadian follow-up guidelines, a summary table of guidelines for reminders, and a resource kit for supportive care. The documents were compiled in a binder and were reviewed with the patient during a 30-minute educational session with a nurse. The nurse stated that the PCP was responsible for primary follow-up. The SCP was also sent to the PCP with the full follow-up guidelines.</td>
<td>No statistically significant differences were found between the groups on any of the outcome measures at any time point. Fewer controls than intervention patients could identify their PCP as primarily responsible for care at 12 months (89.1% versus 98.7%; 95% CI [3.9, 15.9], p = 0.005).</td>
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<td>Jefford et al., 2011</td>
<td>Pilot study, pre- and post-test single-group design, Colorectal cancer survivors</td>
<td>The survivor care intervention included educational information through a DVD, booklet, and a question prompt list; an individualized SCP for the survivor, PCP, and oncology specialist; a face-to-face 60-90-minute nurse-led end-of-treatment session two weeks after treatment completion; and three follow-up telephone calls. The nurse-led session included a discussion of treatment completion and future needs, a discussion of psychosocial needs that prompted referrals, SCP discussion, transition to PCP, coaching on health promotion, and referral to support groups. The telephone calls reinforced the educational session and screening occurred for distress and unmet needs.</td>
<td>Eighty percent of patients completed the intervention. Thirty percent of patients were experiencing distress at baseline, and 38% at follow-up. Patients (9 of 12) had an average of 7 of 35 unmet needs at baseline, and 5 of 8 patients had average unmet needs of 4 at follow-up. QOL was an average of 71 of 100 at baseline and 69 of 100 at follow-up.</td>
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ASCO—American Society of Clinical Oncology; CI—confidence interval; HADS—Hospital Anxiety and Depression Scale; NCCN—National Comprehensive Cancer Network; PCP—primary care physician; QOL—quality of life; SCP—survivorship care plan
Table 1. Studies of Provider-Mediated Survivorship Care Interventions (Continued)

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<td>Wattchow et al., 2006</td>
<td>Randomized, controlled trial</td>
<td>Patients were randomized to receive follow-up care from their surgeon or PCP after their final postsurgical follow-up four to six weeks after surgery or completing postsurgical chemotherapy. Follow-up guidelines were provided for the PCPs and surgeons.</td>
<td>No statistically significant differences existed between the two groups at 12 or 24 months for a HADS score. Patients had an average reduced QOL with physical health at baseline that improved, but no statistically significant differences existed between groups at 12–24 months follow-up. No statistically significant differences existed between groups for patient rating of excellent or very good on the patient satisfaction scale at 24 months. Patients in the PCP-led group were significantly more likely to have one or more fecal occult blood test (p &lt; 0.003). Patients in the surgeon-led group were significantly more likely to have more ultrasounds (p = 0.04) and one or more colonoscopies (p = 0.027).</td>
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<td>Wheelock et al., 2013</td>
<td>Retrospective study</td>
<td>A group educational session was offered to patients one time to help them orient to the survivorship clinic. A nurse educator moderated a one-hour presentation about the survivorship clinic, symptoms common to breast cancer survivors, and shared information about resources for symptom management and wellness. A medical oncologist or surgeon led a 30-minute question-and-answer session. Patients received a binder with educational information on symptoms and complications of breast cancer treatment, recommended resources, and psychosocial services.</td>
<td>Forty-seven percent of patients who were referred to the survivorship clinic attended the educational session. Referred patients who had not had an appointment in the survivorship clinic were less likely to have attended an educational session (odds ratio = 0.27, p = 0.0028).</td>
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ASCO—American Society of Clinical Oncology; CI—confidence interval; HADS—Hospital Anxiety and Depression Scale; NCCN—National Comprehensive Cancer Network; PCP—primary care physician; QOL—quality of life; SCP—survivorship care plan

Inclusion of Institute of Medicine Recommendations

One major recommendation from the IOM report is to use a survivorship care plan to structure and/or facilitate survivor follow-up care. The goals of survivorship care, outlined in the IOM report, are to (a) coordinate care between providers; (b) prevent new or recurrent cancers and other late effects; (c) provide surveillance for new or recurrent cancers, late effects, and psychosocial concerns; and (d) intervene to mitigate late effects, psychosocial needs, employment, insurance, and disability issues. Havitt et al. (2005) and the literature reviewed in these recommendations. Some studies reviewed varied in their adherence to these recommendations. Some studies had tight adherence (Curcio et al., 2012; Jefford et al., 2011), whereas others had low adherence to these recommendations. The studies reviewed varied in their inclusion of these recommendations. Some studies reviewed had tight adherence (Curcio et al., 2012; Jefford et al., 2011), whereas others had low adherence to these recommendations (Blaauwbroek et al., 2008, 2012; Brothers et al., 2013; Grunfeld et al., 2006, 2011; Wattchow et al., 2006; Wheelock et al., 2013). Five of the nine studies included the use of a survivorship care plan (Blaauwbroek et al., 2012; Brothers et al., 2013; Curcio et al., 2012; Wheelock et al., 2013; Grunfeld et al., 2011).
2012; Grunfeld et al., 2011; Jefford et al., 2011). Wheelock et al. (2013) discussed the provision of a binder to patients to accompany the group educational session but did not specifically identify the binder contents as a survivorship care plan. The binder contents also did not appear to meet the standards of a survivorship care plan as outlined by the IOM (Hewitt et al., 2005; Wheelock et al., 2013).

All of the studies that included a survivorship care plan did not discuss the inclusion of information regarding employment protection or health insurance access (Blaauwbroek et al., 2012; Brothers et al., 2013; Curcio et al., 2012; Grunfeld et al., 2011; Jefford et al., 2011). Health insurance access may not have been included in some studies because it is not as relevant in countries outside of the United States with universal healthcare systems (Blaauwbroek et al., 2012; Grunfeld et al., 2011; Jefford et al., 2011). Brothers et al. (2013) did not discuss the direct provision of a survivorship care plan to the family physician, whereas the other studies including a survivorship care plan did comply with this recommendation from the IOM report (Blaauwbroek et al., 2012; Brothers et al., 2013; Curcio et al., 2012; Grunfeld et al., 2011; Hewitt et al., 2005; Jefford et al., 2011).

Care coordination was specified in six studies as giving primary care providers guidance about care needed by cancer survivors through either a survivorship care plan or another mode of information transmission (Blaauwbroek et al., 2008, 2012; Curcio et al., 2012; Grunfeld et al., 2006, 2011; Jefford et al., 2011). Wellness information was included in the survivorship care plans of Blaauwbroek et al. (2012), Brothers et al. (2013), Curcio et al. (2012), and Jefford et al. (2011), which is a means of supporting survivors in prevention activities. Three of these four studies included provider-mediated instruction regarding the contents of the survivorship care plan as a component of their intervention (Brothers et al., 2013; Curcio et al., 2012; Jefford et al., 2011). All of the studies included surveillance activities (Blaauwbroek et al., 2008, 2012; Brothers et al., 2013; Curcio et al., 2012; Grunfeld et al., 2006, 2011; Jefford et al., 2011; Wattchow et al., 2006; Wheelock et al., 2013). Curcio et al. (2012), Jefford et al. (2011), and Wheelock et al. (2013) included information provision, coaching, or referrals for psychosocial support. Curcio et al. (2012) and Jefford et al. (2011) were the only studies that provided a survivorship care plan and addressed prevention, surveillance, intervention, and coordination of care activities recommended by the IOM (Hewitt et al., 2005).

Study Outcomes

Primary and secondary outcomes for each study were not consistent across the studies in the current review. Primary outcomes are those of the greatest importance to the study, whereas secondary outcomes provide additional evidence for the effects of the study intervention. For example, the primary outcome in Grunfeld et al. (2011) was distress as measured by the Impact of Events Scale, whereas the primary outcomes in Wattchow et al. (2006) were quality of life measured by the Short Form-12 and depression and anxiety measured by the Hospital Anxiety and Depression Scale. The change in these measures was the main emphasis in these studies, whereas secondary outcomes, such as number of diagnostic investigations in Wattchow et al. (2006) and quality of life, psychological distress, and continuity of care in Grunfeld et al. (2011), were also assessed for changes over time.

The interventions in Jefford et al. (2011) and Curcio et al. (2012) consistently adhered to the IOM goals and recommendations for survivorship care; however, both were pilot studies and not sufficiently powered to evaluate the outcomes of the interventions, although anxiety scores did decrease significantly from baseline to time 1 (4.6, p < 0.05) in Curcio et al. (2012).

Several notable outcomes were reported in the studies with more statistical power. In the studies that addressed specialist versus primary care survivorship care provision, no statistical difference in the primary outcomes was found between those cared for by a primary care physician versus those receiving care from an oncology or surgical specialist (Grunfeld et al., 2006; Wattchow et al., 2006). In a study of shared care, Blaauwbroek et al. (2008) found that 88% of survivors were satisfied with care provided by their family physicians and 82% of family physicians were satisfied with the shared care model. In two of the studies that evaluated the impact of a survivorship care plan, no statistically significant differences were found between groups on primary outcome measures (Brothers et al., 2013; Grunfeld et al., 2011). Blaauwbroek et al. (2012) studied the use of a survivorship care plan to support shared care and found that 83% of family doctors in their study

Knowledge Translation

The evidence for provider-mediated survivorship care interventions that adhere to Institute of Medicine (IOM) recommendations for survivorship continues to be limited.

Nurse-led interventions addressed in this review most consistently aligned with IOM recommendations but did not have robust data to support the intervention.

Education was part of several study interventions but was only directly addressed in one study in this review, whereas nonexperimental research outside of this review has supported the need for patient-centered education in survivorship care.
performed screenings according to Dutch guidelines. In Wheelock et al.’s (2013) retrospective investigation of the impact that group educational sessions have on survivorship care, they found that, compared to referred survivors who attended an appointment at the survivorship clinic, those who did not attend an appointment at the survivorship clinic were less likely to have attended an educational session (odds ratio = 0.27, p = 0.0028).

Discussion

Although the IOM report has had profound influence on the trajectory of survivorship care since 2005, all but two of the experimental and quasi-experimental studies in this review did not fully adhere to the recommendations for surveillance, prevention, intervention, continuity of care, and the use of the survivorship care plan. With the variety of care settings and interventions described in this review, the research surrounding the implementation of survivorship care interventions and the use of a survivorship care plan clearly is in its infancy. In addition, interventions are not fully incorporating the IOM recommendations, as only two of the nine interventions in this review were structured in a way that all of the goals of survivorship care and the use of a survivorship care plan were included (Curcio et al., 2012; Jefford et al., 2011). Care interventions must be measured and structured against the standards of care driving them. Tools to do this have been developed by researchers such as Palmer et al. (2013).

The outcomes among the studies themselves were diverse and inconclusive. First, no one care provider was identified as the key provider in survivorship care based on survivor outcomes. For example, the two studies comparing specialist to primary care provider follow-up demonstrated no significant difference between the groups on survivor outcomes (Grunfeld et al., 2006; Wattchow et al., 2006). However, other studies outside this review have shown a survivor preference for follow-up care provision to occur through oncology with support from primary care providers (Cheung, Neville, Cameron, Cooke, & Earle, 2009; Hudson et al., 2012; Mayer et al., 2012). Evaluation of a shared care model in Blaauwbroek et al. (2008) demonstrated that survivors and PCPs were satisfied with the model, but that is not a powerful enough outcome to establish shared care as the best model of survivorship care. Finally, in one of the two nurse-led intervention studies, survivor anxiety levels decreased significantly but the other nurse-led pilot study had limited data to report, so further research

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<th>Study</th>
<th>SCP</th>
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SCP—survivorship care plan
Second, the use of a survivorship care plan did not consistently improve survivor outcomes across the studies reviewed. In the controlled trials conducted by Grunfeld et al. (2011) and Brothers et al. (2013), outcomes were not significantly different between the groups who received a survivorship care plan and the control groups. Alternatively, Blauwbroek et al. (2012) found that a high percentage of primary care providers adhered to follow-up guidelines with the use of the survivorship care plan. Other studies not included in this review have shown that patients, primary care providers, and oncologists see the value of a survivorship care plan as a communication tool to help promote continuity of care (DiCicco-Bloom & Cunningham, 2013; Hahn et al., 2013; Hewitt, Bamundo, Day, & Harvey, 2007; Kantsiper et al., 2009). Unfortunately, the controlled trials reviewed did not measure the construct of communication between providers and between providers and survivors (Brothers et al., 2013; Grunfeld et al., 2011).

The value of education in the survivorship care process was noted in many of the studies reviewed but directly examined in only one (Wheelock et al., 2013). Specifically, Wheelock et al. (2013) introduced an educational intervention that was significantly associated with greater survivorship clinic attendance, therefore indicating that education may add value to survivorship care interventions. These findings align with the results of several qualitative studies of cancer survivors outside this review that discuss the needs of cancer survivors regarding education and preparation for the long-term consequences of cancer, psychosocial resources and support, and needed follow-up care for their cancer care (Hewitt et al., 2007; Parry, Morningstar, Kendall, & Coleman, 2011). Ultimately, the studies in this review were not redundant or rigorous enough to make firm conclusions regarding the value of specific intervention structures or settings of care.

**Limitations**

This review has several limitations, including the number of studies in the review, the diversity of interventions examined, the exclusion of nonexperimental studies, the inclusion of studies outside of the United States, and the inclusion of studies addressing pediatric and adult cancer survivors. Nine studies were evaluated, which limits the conclusions that can be drawn from this review. This number could be because of the search limits, the inclusion and exclusion criteria, or the lack of experimental research regarding survivorship care in general. The studies were varied in the types of interventions that were addressed. Without redundancy in design or outcomes, the analysis of these studies is limited. No statistical analysis was performed across studies that would provide more concrete evidence to support or discredit the interventions. Studies outside of the United States were included, despite the IOM being based in the United States. Although located in the United States, the IOM intends to impact domestic and global health care with its cited reports (IOM, 2010). In fact, Grunfeld et al. (2011) cited the IOM’s recommendation for a survivorship care plan as the impetus for the study. Both childhood and adult cancer survivors were the participants in these studies, and differences exist in the structure of survivorship care between these populations. The IOM report was intended for survivors of adult cancer, so using the IOM report as a standard to evaluate adult survivors has inherent flaws. However, these studies were incorporating the interventions and structure of survivorship care that were recommended by the IOM such as survivorship care plans and shared care (Hewitt et al., 2005). Mixed method, qualitative, and evaluation-based methods were not included in this review, as the purpose of the review was to evaluate provider-mediated interventions in experimental and quasi-experimental studies. Despite weaknesses, the current review does provide a picture of the state of experimental research focused on general cancer survivorship care.

**Implications for Practice and Research**

Cancer survivorship is a significant public health issue, and the number of survivors will continue to grow with treatment advances and the aging baby boomer population. Providers in primary care and oncology settings need to become well versed regarding the needs of cancer survivors, including the recommendations from the IOM report and standards set by organizations like the CoC. Cancer survivorship research needs to move forward in addressing survivorship care models, implementation of survivorship care plans, and incorporation of multidisciplinary teams with experts in education and communication that are reflective of the available guidelines for survivorship care. To more effectively evaluate the models of care, care settings and providers, and the use of a survivorship care plan, study designs and measures need to focus on the goals and recommendations outlined in the IOM report for survivorship care (Hewitt et al., 2005). In doing so, evidence-based care will address the concepts of prevention, recurrence, detection, treatment late effects, and continuity of care to improve outcomes (Hewitt et al., 2005). Policy makers and nonprofit organizations funding cancer research need to recognize the importance of survivorship in the cancer trajectory and provide research support for this area of cancer care.
Using nurses more intentionally in the provision of cancer survivorship care is an approach that may promote survivor education and decrease the cost of care delivery. Three of the nine studies in this review distinctly discussed and used nurses in the interventions (Curcio et al., 2012; Grunfeld et al., 2011; Jefford et al., 2011), whereas the other studies may have used nurses without focusing on the nurse as part of the intervention. Interestingly, the two studies that focused on a nurse-led intervention were the studies with the closest adherence to the goals and recommendations for survivorship care from the IOM (Curcio et al., 2012; Jefford et al., 2011). Other studies, which are not included in this review, have used nurses in follow-up care interventions for cancer survivors. Beaver et al. (2012) found that nurse-led telephone follow-up care versus hospital follow-up care for colorectal patients resulted in satisfaction rates that were not significantly different between groups; interestingly, survivors in the telephone follow-up group communicated their concerns more often that those in the hospital follow-up care group. McFarlane et al. (2011) found a nurse-led follow-up clinic for colorectal patients to be a feasible option for care delivery. More studies addressing nurse-led follow-up care interventions should be conducted to evaluate the cost and outcomes of this care approach.

Conclusion

Despite the IOM’s seminal report about the need for cancer survivorship care, limited evidence has been gathered evaluating survivorship care interventions. Future researchers need to design interventions and corresponding studies that align with the IOM’s recommendations for cancer survivorship care and assess outcomes associated with the interventions. Providers can play a significant role in this area of care by understanding the distinct needs of cancer survivors and providing expert patient education. Through these types of researcher and provider activities, a solid foundation of evidence reflecting the purposes for cancer survivorship care will emerge.

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