Chemotherapy Education for Patients With Cancer: A Literature Review

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A literature review was conducted to determine the best way to provide chemotherapy education to patients. Sixteen articles that employed various teaching methods (e.g., video recordings, in-person class) were identified. Some educational methods have been proven to decrease anxiety, which allows patients to retain more information. Many ways can be used to provide chemotherapy education, and no method has been proven to be significantly more effective than another. Maximum retention is largely based on patient preference.

Literature Review

A literature review was conducted to determine the best way to provide information to patients about chemotherapy using CINAHL® and MEDLINE®. Initially, attempts were made to use articles published only within the past five years, but because of the major focus on chemotherapy education, the date range was changed to include articles from 1999–2013. Key terms included chemotherapy, anticancer drugs, antineoplastic agents, patient education, teaching materials, and video education. Only quantitative research was included. The author identified 16 articles to be used in the literature review (see Table 1).

When conducting the search, the author wanted to use only research that focused on oncology and chemotherapy education. Chemotherapy education and education on cancer itself are different because of the wide range of side effects that require appropriate management in addition to challenges of the diagnosis (Kinnane & Thompson, 2008). The author also had an interest in informed consent for chemotherapy, so only articles that discussed informed consent were included.

Findings

Different forms of patient education (e.g., audio recording, video recording, in-person class, one-on-one discussion, telephone calls) were included in the literature review to determine the best method of providing education to patients about chemotherapy. Some of these approaches allow patients to learn on their own time (Thomas et al., 2000). Chemotherapy education through the use of audio- or video-recording methods

When patients are diagnosed with cancer, a wide range of emotions begin to surface (Prouse, 2010). Understanding what chemotherapy is, how it works, and what to expect during administration can lessen patients' fears and anxieties (American Cancer Society, 2014). However, patients often report difficulty obtaining reliable information about chemotherapy (Thomas, Daly, Perryman, & Stockton, 2000). Patients who receive chemotherapy education experience more successful outcomes compared to patients who have not been educated (Hartigan, 2003). Education is essential for patients to understand how to take care of themselves by managing side effects and knowing when to call healthcare providers for assistance.

The Joint Commission (2012) recognized the importance of patient education by establishing requirements. Education about chemotherapy treatment, side effects, and self-care behaviors can reduce side effects, decrease stress, and improve quality of life (Williams & Schreier, 2004). Many methods of chemotherapy education can be effective; however, multiple resources can lead to contradicting information, which can be more confusing to some patients (Rigdon, 2010).

Because patients have many ways to learn, patient education should include an array of different teaching strategies and written materials (Treacy & Mayer, 2000). Teaching methods should be based on patient preference and individually tailored to meet the patients' needs (Hartigan, 2003). One of the first goals of the teaching process is to develop a rapport with the patients and their families so they feel comfortable enough to ask questions (Hartigan, 2003). Patients need emotional support to begin the coping process and ensure maximum education retention. Patients who are anxious have been shown to have difficulty retaining information (Malone, 2007). Therefore, the real issue is to discover the best way to provide chemotherapy education to patients for them to recall the most information.
### TABLE 1. Literature Review

<table>
<thead>
<tr>
<th>Study</th>
<th>Design and Sample</th>
<th>Instruments and Results</th>
<th>Implications</th>
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<tbody>
<tr>
<td>Bakker et al., 1999</td>
<td>A comparative descriptive design using one-on-one nurse-patient education compared to patients receiving the session plus a take-home instructional video with 61 patients with cancer receiving chemotherapy for the first time</td>
<td>Self-report questionnaire and an investigator-developed questionnaire that assessed information recall; no statistically significant differences were found between groups. Patients preferred to receive information from healthcare providers.</td>
<td>Patients can recall key facts about the information provided to them, but evaluations should not be limited to recall of information.</td>
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<td>Craddock et al., 1999</td>
<td>Quasiexperimental study to determine whether 48 patients with stage I or II breast cancer from a private practice who were scheduled to begin chemotherapy managed side effects better after three telephone calls and oral and written self-care measures</td>
<td>Researcher-designed self-care questionnaire; no statistically significant differences were found between groups based on the effectiveness of self-care measures used to relieve side effects of chemotherapy.</td>
<td>Nurses should encourage patients to use self-care measures to help with chemotherapy side effects to provide additional support to patients.</td>
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<td>Cumbo et al., 2002</td>
<td>A study converting a CD-ROM to a web-based format using 301 surveys</td>
<td>Investigator-created surveys; the majority of users preferred Internet material over CD-ROM but found information on the CD-ROM to be useful.</td>
<td>User evaluations should help to improve educational websites.</td>
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<td>Davies &amp; Yeoh, 2012</td>
<td>Study to determine whether 261 patients receiving chemotherapy who sought Internet information found reliable information</td>
<td>Self-administered questionnaires for patients and healthcare providers; Internet information is viewed as valuable by patients but thought to be inaccurate and potentially harmful by healthcare providers.</td>
<td>Reliable information can improve patients’ knowledge of chemotherapy through Internet information and traditional consultations.</td>
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<td>Jones et al., 2008</td>
<td>203 questionnaires were completed in three outreach clinics during a six-month period to compare patient preferences in receiving education from healthcare providers in community versus academic clinics.</td>
<td>13-item questionnaire about educational preference; patients preferred written chemotherapy education that was reviewed with a healthcare provider.</td>
<td>Improving the consistency of information would require educating all staff members who provide education to patients.</td>
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<td>Keller, 2006</td>
<td>Women were approached to participate in a 30-minute educational intervention before the start of chemotherapy to increase knowledge of side effects and coping strategies.</td>
<td>Patients in the intervention were found to have a better understanding of treatments and lower anxiety than those treated conventionally, but additional research is needed.</td>
<td>The educational intervention may be a useful guide to oncology nurses who are developing patient education skills.</td>
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<td>Kinnane &amp; Thompson, 2008</td>
<td>64 patients in a two-arm randomized, controlled trial using standard education and standard education plus an education video to compare the recall of information on self-care and side effects</td>
<td>15-item questionnaire assessing information recall; all participants were satisfied with the educational video, and those who watched it showed better information recall.</td>
<td>Information on when to contact healthcare providers is important because patients often wait until their next visit to report symptoms.</td>
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<td>Malone, 2007</td>
<td>A chemotherapy class was given to reduce treatment anxiety for men and women aged 25–83 years.</td>
<td>An eight-question survey focusing on the effectiveness of the class; 84% of completed surveys gave an “excellent” or “good” rating.</td>
<td>Improved coping strategies may result from nurses meeting with patients and their families in a quiet environment prior to the first treatment.</td>
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<td>Olver et al., 2009</td>
<td>A randomized, controlled trial to determine whether an interactive CD-ROM improved recall of chemotherapy treatment information in 101 patients about to begin chemotherapy</td>
<td>Short questionnaire in multiple-choice format based on patients’ satisfaction and understanding; no significant differences were found between groups based on recall of information.</td>
<td>Multiple different teaching methods can improve patients’ recollection of information.</td>
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<td>Prouse, 2010</td>
<td>A review of current literature regarding prechemotherapy education using nine articles</td>
<td>Literature review using the Joanna Briggs Institute Appraisal Checklist; multimedia devices did not improve information recall but may be useful tools to treat anxiety prior to treatment.</td>
<td>Educating and supporting patients is one of the most important tasks of the oncology nurse.</td>
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<td>Ream et al., 2006</td>
<td>103 patients receiving chemotherapy for the first time were evaluated in a supportive intervention for fatigue.</td>
<td>Visual analog scale, Hospital Anxiety and Depression Scale, General Health Status Questionnaire, COPE Questionnaire, and a fatigue diary; intervention group reported significantly less fatigue than the control group.</td>
<td>Fatigue in patients with cancer may be managed when systematic attempts are made by the providers.</td>
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<td>Rigdon, 2010</td>
<td>Patients aged 65 years or older receiving chemotherapy were given chemotherapy education using the physical and cognitive changes associated with aging.</td>
<td>Oral survey assessing perceptions and retention of information; no statistically significant differences were found, but patients were generally able to recall and provide examples of managing side effects and chemotherapy.</td>
<td>Effective teaching of older adults can promote adherence to schedules and optimal dosing.</td>
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could benefit patients with literacy issues. Studies suggest that patients are satisfied with the use of video recordings as a teaching method and that the recordings are an effective method of patient education (Thomas et al., 2000; Williams & Schreier, 2004). Video supplementation appears to be beneficial in reducing anxiety and increasing retention in some of the studies reviewed, but not all of the studies about video recordings came to the same conclusion (Bakker et al., 1999; Kinnane & Thompson, 2008; Schofield et al., 2008; Thomas et al., 2000).

An educational class that was discussed in one article appeared to help patients decrease anxiety and understand and apply the information given (Keller, 2006). One study discussed ways to reduce fatigue using a one-on-one educational session. During the session, energy conservation methods were discussed; this method had proved to be successful in reducing fatigue (Ream, Richardson, & Alexander-Dann, 2006). One study concluded that patients preferred to use the Internet rather than a CD-ROM computer program (Yesilbalkan, Karadakovan, & Göker, 2009). Although the study conducted by Craddock, Adams, Uusi, and Mitchell (1999) that used telephone calls did not prove to be a successful means of education, nurses should still make follow-up calls with patients to reinforce education throughout their treatment (Rigdon, 2010). Patients did not show a difference in retention of information when different forms of education were compared. However, patients seem to prefer to receive written information that can be reviewed with them by the healthcare provider (Jones et al., 2008).

Patients should be given the opportunity to ask questions before and after teaching occurs and throughout the treatment process. They should express goals for educational sessions, and the importance of chemotherapy education should be explained by healthcare providers (Malone, 2007). Patients view the Internet as a valuable source of information; however, it should not be the only source because not all information on the Internet is reliable (Yesilbalkan et al., 2009). Nurses should remember that learning new information can be stressful for patients and their families (Malone, 2007), but patients who know what to expect can better cope with side effects (Yesilbalkan et al., 2009).

One best way to provide chemotherapy education to patients may not exist. Nurses are faced with the challenge of providing an overwhelming amount of basic chemotherapy information to patients and their families within a short amount of time (Craddock et al., 1999). Patient education is a complicated process that includes assessment, timing of information given, reinforcement, and evaluation of information retention (Bakker et al., 1999). Nurses have the responsibility of facilitating patient education, communication, and follow-up (Hartigan, 2003). Patients want to learn as much as possible about their cancer, its treatment, and how to manage the side effects (Bakker et al., 1999).

**Limitations**

Many limitations existed in the research used for the current literature review. This literature review regards information that was previously published on the topic of chemotherapy education. Because of a limited number of available articles, articles older than the original five-year limit were considered. Despite the limitations of this literature review, all of the studies reviewed provided valuable information about chemotherapy education, which could lead to further research to improve patient education.

**Conclusion**

Patients should be given the opportunity to ask questions before and after teaching occurs and throughout the

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**TABLE 1. Literature Review (Continued)**

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<tr>
<td>Schofield et al., 2008</td>
<td>Quasiexperimental design incorporating a DVD showing behavioral role modeling with 63 patients who met inclusion criteria</td>
<td>Hospital and Anxiety Depression Scale, Cancer Behavior Inventory, and Supportive Care Needs Survey; DVD was acceptable by patients and considered to increase self-efficacy to reduce supportive care needs.</td>
<td>Providing an educational DVD to patients is safe and effective in the management of side effects.</td>
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<td>Thomas et al., 2000</td>
<td>A randomized, controlled trial to assess the benefits of a video recording to take home following the initial consultation in 220 patients receiving chemotherapy or radiation therapy during a six-month period</td>
<td>Hospital Anxiety and Depression Scale anxiety score; a significant correlation was found between satisfaction and reduced treatment anxiety in the video recording compared to the control.</td>
<td>Patient satisfaction with educational materials can reduce anxieties prior to initial treatment.</td>
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<td>Williams &amp; Schreier, 2004</td>
<td>Randomized clinical trial to determine the effectiveness of educational audio recordings on self-care behaviors and anxiety of describing the occurrence and intensity of side effects in 77 women undergoing the first cycle of chemotherapy</td>
<td>State-Trait Anxiety Inventory, self-care diary, and telephone interview; audio recordings are effective teaching tools for self-care behavior to manage side effects. Anxiety remained high in both groups but was lower in the intervention group.</td>
<td>Audio recordings can provide effective teaching and reinforcement of education; anxiety can interfere with patient learning.</td>
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<td>Yesilbalkan et al., 2009</td>
<td>Descriptive, quasiexperimental design to determine whether 35 patients receiving chemotherapy for the first time for gastrointestinal cancers have decreased perceptions of fatigue after a nurse-led educational intervention</td>
<td>Brief Fatigue Inventory, Piper Fatigue Scale, and European Organisation for Research and Treatment of Cancer Quality of Life Scale; patients who received one-to-one interventions about the management of fatigue obtained short-term benefits in minimizing fatigue and intensity.</td>
<td>Individual education interventions can reduce the severity of fatigue and improve quality of life.</td>
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treatment process. Healthcare providers should explain the importance of chemotherapy education (Malone, 2007). This review of the literature has concluded that one best way to provide chemotherapy education to patients may not exist, but the importance of patient education is stressed. The literature shows that patients want to learn as much as possible about their cancer, its treatment, and managing the side effects (Bakker et al., 1999).

References


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