Hypnosis and cognitive-behavioral therapy during breast cancer radiotherapy: A case report

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Abstract

This case report describes an effort to control two primary side-effects of breast cancer radiotherapy (fatigue and skin discomfort) that used a combination of cognitive-behavioral therapy with hypnosis (CBTH). Two patients, matched on demographic and medical variables (marital status, employment status, number of children, cancer diagnosis, surgical history, radiation dose), were compared: one who received a CBTH intervention and one who received standard care. Results were consistent with the view that CBTH was effective in managing fatigue and skin discomfort, and increasing relaxation.

Keywords: Breast cancer, radiotherapy, CBT, hypnosis.

Over 178,000 women will be diagnosed with breast cancer in 2007 (American Cancer Society, 2007). One of the key approaches to prolonging survival and improving localized tumor control in these women is radiotherapy. Yet despite its medical benefits, the radiotherapy experience can be a grueling one for many patients, as indicated by decreased quality of life during the treatment period (Whelan, Levine, Julian, Kirkbride, & Skingley, 2000). In terms of specific side effects, breast cancer radiotherapy is most often related to fatigue (Jereczek-Fossa, Marsiglia, & Orecchia, 2002) and skin toxicity (Porock & Kristjanson, 1999). Indeed, over the course of radiotherapy, up to 90% of patients report fatigue (with 30% describing it as ranging from severe to intolerable), and 74%-100% of patients experience skin irritation (Wengstrom, Hagmark, Strander, & Forsberg, 2000; Knobf & Sun, 2005; Berthelet et al., 2004) which can range from painful redness (erythema), to open wounds (desquamation), ulceration, and necrosis (Cox, Stetz, & Pajak, 1995). Both

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fatigue and skin irritation can take a substantial toll on women’s quality of life (Berthelet et al., 2004; Bolderston, Lloyd, Wong, Holden, & Robb-Blenderman, 2006; Bower et al., 2000; Porock & Kristjanson, 1999). Also, skin irritation can necessitate treatment breaks, which can reduce local disease control and survival (Bese, Sut, & Ober, 2005).

Currently, there is no gold standard treatment to manage this set of radiotherapy side effects. Consequently, the development of new intervention strategies is required. Based on literature suggesting that: cognitive-behavioral therapy (CBT) is an effective treatment for managing fatigue symptoms in patients undergoing medical treatments for cancer (Gaston-Johansson et al., 2000; Jacobsen et al., 2002); hypnosis is effective in reducing pain (Montgomery, DuHamel, & Redd, 2000; Patterson, Everett, Burns, & Marvin, 1992); and that the average patient undergoing CBT in conjunction with hypnosis benefits more than about 70% of clients receiving CBT alone (Kirsch, Montgomery, & Sapirstein, 1995); we hypothesized that a psychotherapeutic treatment package (CBTH) combining CBT and hypnosis would be effective in managing breast cancer radiotherapy-related fatigue and skin discomfort.

Therefore, the goal of the present report is to describe data collected on two patients, one of whom (Ms. T) received the CBTH treatment, and one of whom (Ms. C) received standard clinical care and served as a comparison patient. The cases are unique in that they are the first published cases, to our knowledge, of breast cancer radiotherapy patients treated with this combination of hypnosis and CBT throughout the course of their radiotherapy treatment with the intent of improving fatigue and skin discomfort.

**Case History**

The participants were closely matched in that both were Caucasian women in their early 50s, unemployed, married with two children, without any comorbid medical conditions, diagnosed with ductal carcinoma in situ (DCIS) (Stage 0) in the right breast; both underwent initial surgery (lumpectomy) to treat the condition, began radiotherapy approximately one month subsequent to lumpectomy, and received the same radiotherapy protocol (i.e., 4860cGy to the whole breast delivered in 26 daily fractions of 180 cGy, followed by a boost of 1400 cGy delivered in seven daily fractions of 200cGy). During treatment, both patients received Biafene radiodermatitis emulsion and Aquaphor healing ointment to manage skin irritation.

**Description of Treatment**

**CBTH - Hypnosis Component**

One week prior to radiotherapy, the therapist (JS) met with Ms. T in the radiation oncology clinic to conduct a brief (15 minute) hypnosis session which consisted of: 1) addressing common misconceptions about hypnosis; 2) a hypnotic induction including direct suggestions for mental and physical relaxation (adapted from Rhue, Lynn, & Kirsch, 1993 specifically for breast cancer radiotherapy patients); 3) guided imagery of a peaceful and safe place; 4) a deepening component with suggestions for increased hypnotic depth; and 5) specific, direct symptom-focused suggestions for decreased fatigue, decreased skin discomfort, and decreased distress. Following these suggestions, Ms. T was given a cue word, which she was instructed she could use to enter hypnosis whenever she liked. Finally, the therapist ended the hypnosis session, and gave Ms. T a pre-recorded hypnosis CD of the intervention to listen to at home. The development of the hypnosis component of the intervention was guided by Response Expectancy Theory (Kirsch, 1985, 1990).
CBTH - Cognitive-Behavioral Therapy Component

The day prior to radiotherapy, the therapist met with Ms. T in the radiation oncology clinic to educate her on: how to identify negative, unhelpful beliefs regarding the experience of side effects and the emotional, behavioral, and physical consequences of those beliefs; how to dispute such beliefs and replace them with more helpful (i.e., rational) alternatives (Ellis, 1994); and on behavioral strategies to manage treatment-related side-effects (including distraction techniques and activity scheduling). To support this didactic training, Ms. T was given a CBT workbook developed for breast cancer radiotherapy patients, and was taught to complete a thought record worksheet, was asked to complete two of these worksheets per week (during the entire course of her radiotherapy) as homework, and met with the therapist twice per week (in the radiation oncology clinic, just prior to her medical appointments) to go over these homework sheets. Each “homework check” lasted only 5-15 minutes. It is important to note that it was made clear to Ms. T that the goal of the intervention was to help her develop more rational beliefs which are effective for her, not to make her falsely or irrationally happy about her cancer, radiotherapy, or side effects.

Finally, on the day before Ms. T's last radiotherapy treatment, the therapist met with her for a 30 minute refresher session. The first 15 minutes of the session were spent reviewing themes that emerged over the course of the homework checks and discussing relapse prevention strategies based on these themes. The second 15 minutes were spent conducting a new hypnosis session, focused on a general sense of energy, health, and well-being as Ms. T ended treatment and moved into survivorship.

Measures

To assess their symptoms, both patients completed 100 mm visual analog scale (VAS) items assessing their current levels of fatigue, discomfort (to capture subjective experiences of skin irritation), and relaxation on a weekly basis. VAS scores range from 0-100. They also completed The Functional Assessment of Chronic Illness Therapy –Fatigue Subscale, a 13 item fatigue scale that was administered at the end of the third and sixth weeks of radiotherapy (Yellen, Cella, Webster, Blendowski, & Kaplan, 1997). To assess hypnotic suggestibility, Ms. T completed the Carleton University Responsiveness to Suggestion Scale (CURSS) (Spanos, Radtke, Hodgins, Stam, & Bertrand, 1983) following the end of her radiotherapy treatment.

Results

The findings (see Figure 1) indicate that: 1) although both patients demonstrated an increase in VAS fatigue over the course of treatment, the overall level of fatigue was lower in Ms. T than in Ms. C., and the rate of increase in fatigue appears to be slower in Ms. T than in Ms. C; 2) Ms. T's level of discomfort remained quite mild throughout treatment whereas Ms. C's level of discomfort increased sharply; 3) Ms. T maintained a consistently high level of relaxation over the course of treatment, while Ms. C maintained a consistently lower overall level of relaxation. The VAS fatigue results were supported by congruent findings on the FS, which showed Ms. C to have become considerably more fatigued during treatment than Ms. T [FS scores for Ms. T (week 3 = 49, week 6 = 48); FS scores for Ms. C (week 3 = 37, week 6 = 31)]. It should be noted that the FS is scored such that higher scores indicate less fatigue. On the CURSS, Ms. T received a CURSS:O score of 3, a CURSS:S score of 7, and a CURSS:OI score of 0.

From a qualitative perspective, Ms. T reported that the CBTH intervention was helpful and “motivating (for attendance)” at her radiation oncology appointments, as she said “it can be difficult to come here when you feel ‘stripped’ literally and figuratively.”
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Ms. C, who did not receive the intervention, reported that during radiotherapy, she felt "volatile emotionally," and that radiotherapy became "increasingly, steadily, tougher physically due to fatigue and breast (skin) soreness." She also reported that she experienced "…frustration over starting each day feeling ‘normal’ energy levels, but then losing steam and feeling physical breast discomfort by afternoon. I wanted to keep a full schedule, but then hit a brick wall late afternoon."

With regard to the hypnosis component of the intervention in particular, Ms. T reported feeling the hypnotic imagery she learned helped her in three ways while in the treatment room: 1) it helped her “calm herself”, 2) it helped her remain still during her treatments, and 3) it helped her manage discomfort when in uncomfortable positions on the treatment table. In particular, Ms. T found it helpful during self-hypnosis to imagine the beach at her vacation home where she would be traveling following the conclusion of treatment. This image simultaneously helped her to distract herself, and to remind herself of the time-limited nature of radiotherapy.

![Figure 1. Mean Weekly Scores on Outcome Measures](image)

**Discussion**

This preliminary report indicates that a combined cognitive-behavioral therapy and hypnosis (CBTH) treatment may make the breast cancer radiotherapy experience easier to bear. More specifically, the CBTH intervention appeared to be helpful for Ms. T in terms of controlling her levels of fatigue and discomfort relative to Ms. C, and increasing her level of relaxation relative to Ms. C. This is consistent with the literature supporting the use of CBT and hypnosis in cancer treatment settings discussed above but is unique in testing the synergistic effects of the two in the breast cancer radiotherapy setting.

Although we did not formally examine mechanisms of action in these cases, we hypothesize that our hypnosis intervention worked in two ways – by changing Ms. T’s response expectancies for side effects and by reducing Ms. T’s distress and increasing her level of relaxation. Namely, we believe that the hypnosis allowed Ms. T to expect lower levels of fatigue and skin discomfort, and therefore to experience lower levels of these side effects. We also believe that reducing her distress was helpful, as literature has shown stress to
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...contribute to both fatigue (Jereczek-Fossa et al., 2002) and factors related to skin irritation such as impaired wound healing (Kiecolt-Glaser, Marucha, Malarkey, Mercado, & Glaser, 1995). We view hypnosis as a critical ingredient to the psychotherapy treatment package, as the CBT was more broadly focused, and only the hypnosis component directly targeted potential physical side effects.

Of course, like any report, this has its limitations. First, we cannot assume causality based on these two cases alone. However, the present results suggest the potential importance of conducting randomized controlled trials to more definitively determine the efficacy of this CBTH intervention for women undergoing breast cancer radiotherapy. Second, as this was an initial case report, we did not have an attention control condition, and therefore, cannot rule out the role of nonspecific factors (e.g., working alliance) in the beneficial effects of the CBTH intervention. Nonspecific factors could account for intervention effects but we felt it important to first demonstrate that the intervention can have a positive impact on common aversive side effects in these patients. Third, generalizability to a wider variety of breast cancer radiotherapy patients (e.g., with more advanced disease, who are employed during treatment, those who are more highly suggestible) needs to be investigated. Fourth, we did not have patients who received either treatment ingredient (hypnosis, CBT) alone, and therefore cannot determine whether both are necessary active ingredients. However, based on literature suggesting the additive benefit of combining the two treatments (Kirsch et al., 1995), we would predict that both are necessary components.

Clearly, this area is ripe for a randomized clinical trial on the effects of CBTH on fatigue and skin discomfort. The focus of such an initial trial should be to demonstrate the clinical benefit of the CBTH intervention. Therefore, it would be appropriate to initially compare the CBTH intervention to a standard care control group in a large scale study to establish clinical effectiveness. Subsequent to such a trial it would then be appropriate to investigate the mechanisms underlying the clinical benefit of CBTH; for example, by altering the control condition to address the contribution of nonspecific therapeutic factors to clinical impact (e.g., use of an attention control), by assessing the relative contributions of the hypnosis and CBT components separately, or by evaluating potential mediators (e.g., expectancies, irrational beliefs) and moderators (e.g., hypnotic suggestibility) of intervention effects. Furthermore, different types of hypnotic interventions (e.g., manipulating the frequency and timing of the intervention, altering the wording of specific hypnotic suggestions over time in response to symptom intensity changes) may be evaluated to determine whether they enhance clinical outcomes. Some of the possible difficulties in conducting such randomized controlled trials could include: patients being unwilling to be randomized to control conditions, patients having difficulty finding time in their busy schedules to attend study interventions sessions or to complete study questionnaires, or patients being too fatigued to complete study-related tasks. These factors would have to be monitored to ensure that patient burden was minimized while maximizing scientific rigor.

To conclude, this case report provides evidence for the potential clinical utility of a CBTH intervention to reduce symptoms in breast cancer patients receiving radiotherapy.
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References


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