HYPNOTIC RELAXATION THERAPY FOR TREATMENT OF HOT FLASHES FOLLOWING PROSTATE CANCER SURGERY: A Case Study

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Abstract: This case study reports on a 69-year-old African American male who presented with hot flashes following a diagnosis of prostate cancer and subsequent prostatectomy. Measures include both self-reported and physiologically measured hot flash frequency and sleep quality. The intervention involved 7 weekly sessions of hypnotic relaxation therapy directed toward alleviation of hot flashes. Posttreatment self-reported hot flashes decreased 94%; physiologically measured hot flashes decreased 100%; and sleep quality improved 87.5%. At week 12, both self-reported and physiologically measured hot flashes decreased 95% and sleep quality improved 37.5% over baseline, suggesting hypnotic relaxation therapy may be an effective intervention for men with hot flashes following treatment for prostate cancer.

Hot flashes (also known as vasomotor events or hot flushes) have been defined as “a subjective sensation of heat that is associated with objective signs of cutaneous vasodilation and a subsequent drop in core body temperature” (Boekhout, Beijnen, & Schellens, 2006, p. 642), can last from a few moments to several minutes and are often accompanied by perspiration, anxiety, irritability, and distress (Finck, Barton, Loprinzi, Quella, & Sloan, 1998). While hot flashes are most commonly associated with the menopause transition in women they can also occur in men. Among prostate cancer patients, hot flashes have been reported in men who have undergone surgical castration through orchietomy or chemical castration through androgen ablation therapies (Adelson, Loprinzi, & Hershman, 2005). In addition, men who have a history of hot flashes due to androgen deficiency (Spetz et al., 2007) and who are forced to discontinue hormone therapy treatment for vasomotor symptoms following prostate cancer diagnosis can experience a recurrence...
of hot flashes. Up to 80% of prostate cancer patients experience hot flashes (Clark, Wray, & Ashton, 2001; Engstrom, 2008), and of those, up to 50% develop hot flashes that are severe enough to require treatment (Suzuki, Kobayashi, & Tokue, 2003). Furthermore, depending upon treatment, prostate cancer survivors can experience hot flashes that are more frequent, severe, and longer in duration than those associated with menopause (Adelson et al., 2005), and these events can persist up to 8 years after symptom onset (Engstrom, 2008; Spetz, Zetterlund, Varenhorst, & Hammar, 2003). Notably, hot flashes have been cited as one of the most distressing symptoms associated with prostate cancer treatment (Spetz et al., 2003).

Current treatments for hot flashes among prostate cancer patients and survivors include selective serotonin reuptake inhibitors, serotonin–norepinephrine reuptake inhibitors, gabapentin, synthetic steroidal antiandrogens, progesterones, exogenous estrogens, and some mind-body therapies such as acupuncture (Adelson et al., 2005). However, outcomes from these therapies have been mixed, and the safety and efficacy of currently available treatments remain in question.

The prevalence of hot flashes among prostate cancer patients and the limitations and risks of current treatment options highlight the need for safe, effective treatments that offer minimal risk for patients. Previous studies have shown hypnotic relaxation therapy to be effective in the reducing hot flashes among postmenopausal women (Elkins, Fisher, Johnson, Carpenter, & Keith, 2013) and breast cancer survivors (Elkins, Marcus, Stearns, & Hasan Rajab, 2007; Elkins et al., 2008). However, to our knowledge, the use of hypnotic intervention in the treatment of hot flashes among prostate cancer patients has yet to be investigated. The purpose of the present article is to describe the use of hypnotic relaxation therapy in the treatment of a prostate cancer patient suffering from hot flashes.

**Case Study**

Mr. W, a 69-year-old, married African American male presented with uncontrolled hot flashes. He stated that hot flashes were very frequent and the occurrence of hot flashes at night interfered with his sleep. Mr. W’s symptom onset was marked by the experience of nightly hot flashes beginning in the spring of 1999. Medical diagnostics confirmed androgen deficiency, and Mr. W began receiving treatment of testosterone injections once every three weeks. Though the testosterone injections alleviated his vasomotor symptoms, Mr. W was diagnosed with prostate cancer in October, 2010 and was subsequently forced to discontinue hormone therapy. He received his final testosterone injection 1 week prior to prostatectomy in December,
2010. Approximately 8 weeks following his prostatectomy, Mr. W’s symptoms reemerged, and he began experiencing increasing vasomotor events without relief.

**Measures**

*Hot Flash Symptoms Diary (HFSD)*. Hot flash frequency and severity were measured using the Hot Flash Symptoms Diary (Sloan et al., 2001). The diary allows for recording of both hot flash severity (mild, moderate, severe, and very severe) and frequency over a 7-day period. The instrument both measures hot flash frequency and enables calculation of hot flash score (product of frequency \( \times \) severity). The patient completed the Hot Flash Symptoms Diary for one week at baseline, for 7 weeks during the intervention, and for one week at 12-week follow-up.

*BologTM Skin Conductance Monitor*. Ambulatory skin conductance monitoring is the current gold standard for the physiological measure of hot flashes. The *BologTM* ambulatory recorder (UFI Model 7-day 3991 SCL, Morro Bay, CA) was utilized to record physiological evidence of hot flashes. An increase of 2 \( \mu \)mho of skin conductance within a time frame of 30 seconds (Freedman, 1989, 1998) was defined as indicating a hot flash. The patient wore the hot flash monitor for a 24-hour period at baseline, Week 7, and 12-week follow-up.

*Pittsburg Sleep Quality Index (PSQI)*. The 19-item, Pittsburg Sleep Quality Index (PSQI; Buysse, Reynolds, Monk, Berman, & Kupfer, 1989) is a self-report measure of sleep quality for which reliability and validity (\( \alpha = 0.83 \)) are well established. The instrument is comprised of seven scales evaluating dimensions of sleep quality including subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, daytime dysfunction, and use of sleeping medication. The patient completed the PSQI at baseline, Week 7, and 12-week follow-up.

*Elkins Hypnotizability Scale (EHS)*. The Elkins Hypnotizability Scale (Elkins, 2013) was utilized to evaluate hypnotizability. The 12-item scale consists of a hypnotic induction and suggestions and takes approximately 30 minutes to administer and score. The scale is internally consistent (\( \alpha = .849 \)) and demonstrates convergent validity with the Stanford Hypnotic Susceptibility Scale, Form C (SHSS:C, Weitzenhoffer & Hilgard, 1962). The patient completed the EHS at the 12-week follow-up.

**Hypnotherapy Intervention**

Following the initial consultation and completion of baseline measures, Mr. W was seen for 7 weekly, approximately one-hour sessions of hypnotic relaxation therapy. Primary goals of the intervention included...
reduction of hot flash frequency, severity, and improvement of sleep quality. The intervention has been previously described (see Elkins, 2013; Elkins et al., 2008; Elkins et al., 2013) and includes a hypnotic relaxation induction and suggestions for relaxation, comfort, coolness, and dissociation from hot flashes. Mr. W was also provided with an audio recording of a hypnotic relaxation induction for the reduction of hot flashes and was instructed to practice self-hypnosis using the recording at least daily.

During Sessions 2 and 3, Mr. W was again administered a hypnotic induction following a transcript for the reduction of hot flashes. Suggestions were given that Mr. W would experience feelings of comfort and coolness, that he would feel a “cool, cold breeze coming in from the lake...” and that he would “feel the cold air on [his] face...”. Suggestions were also provided for dissociation from hot flashes, “…and it is possible that you can feel more detached from your body... waves of coolness and comfort flowing over you and through you...”. Posthypnotic suggestions were also given for self-hypnosis and for increased feelings of control, “…and as you become more comfortable... so you will find a sense of being more in control...”. Additionally, Sessions 2 and 3 were modified with individualized mental imagery according to patient preference. Mr. W reported that, during hypnosis, he imagined sitting on a bucket between two trees on a long shore of grass at his favorite fishing spot and watching the water early in the morning, and these images were incorporated into the therapist–delivered hypnotherapy sessions. In addition, during Session 3, Mr. W was instructed in self-hypnosis without the aid of the audio recording. By the end of Session 3, Mr. W reported decreased frequency and severity of hot flashes and noted that his night sweats were improving. Additionally, though he mentioned that the quality of his sleep was generally unchanged, he noted that he had been awakening less frequently at night.

Sessions 4–7 were again delivered utilizing a standardized hypnotic induction with suggestions for symptom reduction and individualized imagery according to patient preference, and the patient continued to report decreased frequency and severity of hot flashes. During Session 4, the patient reported that his hot flashes and night sweats continued to decrease and that he was sleeping better at night. By Session 5, the patient reported that he had gained some control over his vasomotor events and was learning to stop his hot flashes using self-hypnosis. At the end of Session 5, the patient stated that he “was getting cold” and requested a blanket. Mr. W was encouraged in continued practice of self-hypnosis and incorporating self-hypnosis into his daily routine in order to gain increasing control over his hot flashes. Following his final session, the patient was scheduled for his endpoint and follow-up appointments.
Results

Mr. W received an 8 on the Elkins Hypnotizability Scale (Elkins, 2013), indicating that was in the mid-to-high range of hypnotizability. At endpoint, results demonstrated significant decreases in hot flash frequency and severity, hot flash daily interference, and sleep quality. His self-reported hot flashes decreased from 160 at baseline to 9 at endpoint, indicating a 94.3% reduction. Additionally, Mr. W’s score on the PSQI improved by 87.5% from baseline to endpoint indicating a shift from “poor quality of sleep” to “good quality of sleep.” At the 12-week follow-up, PSQI score improvement was 37.5%. With regard to physiologically measured hot flashes, skin conductance monitoring reflected 20 physiologically confirmed hot flashes (in a 24-hour period, approximately 140 per week) at baseline, 0 at endpoint, and 1 hot flash at follow-up. Self-reported and physiologically confirmed hot flashes (per week) are illustrated in Figures 1 and 2, respectively. In addition, at 12-week follow-up, Mr. W’s sleep quality remained within the “good quality of sleep” range as measured by the PSQI (see Table 1).

Discussion

Prostate cancer is the second most common malignancy among men (American Cancer Society, 2013). Approximately one in six men will be diagnosed with prostate cancer in their lifetime (American Cancer Society, 2013) and hot flashes occur in the majority of men who undergo orchietomy or chemical castration through androgen ablation therapies. Safe and effective alternative treatments are needed for hot flashes among men with prostate cancer.

Outcomes of this case study suggest that hypnotherapy may hold promise as an effective, safe intervention for the treatment of hot flashes among men with prostate cancer.
flashes in prostate cancer patients and survivors. The results from this case study demonstrate that, in addition to achieving symptom relief, the patient’s sleep quality improved following the intervention. Both self-reported and physiologically measured hot flashes decreased to a clinically significant degree. These findings are consistent with prior study of the hypnotic relaxation intervention in reducing hot flashes among postmenopausal women (Elkins et al., 2013). In prior studies with postmenopausal women, hot flashes have been reduced by up to 80% on average following 5 weeks of hypnotic relaxation therapy.

Additionally, the patient showed improvement in self-reported sleep quality. At the end of treatment Mr. W’s score on the PSQI improved by 87.5% from baseline to endpoint; however, at the 12-week follow-up, PSQI score improvement had dropped to 37.5%. Hot flashes can
significantly interfere with sleep and the initial reduction may have
been due to the near complete elimination of hot flashes occurring
during sleep hours. However, other factors such as stress and sleep
behaviors can affect sleep quality. It is unknown whether these factors
may have contributed to changes in sleep and a limitation of the study
is that it did not include any objective measures of sleep.

It is noteworthy that in the present case study, the patient scored
in the mid-to-high range of hypnotizability and this may have been a
contributing factor to his improvement. There is some evidence that
hypnotizability may moderate the effect of hypnotic relaxation therapy
on hot flashes (Elkins et al., 2011) among female breast cancer sur-
vivors. However, there have not been any studies to examine the role of
hypnotizability and hypnotic relaxation therapy for hot flashes among
men. Additional investigation would be needed to clarify if similar out-
comes could be achieved in persons who scored in the lower range of
hypnotizability.

Additionally, the limited generalizability of findings from this single
case study is noted. Future clinical trials are needed to fully investigate
the clinical utility of hypnotherapy for hot flashes in men with prostate
cancer.

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Relaxationshypnose als Therapie zur Behandlung von Hitzewallungen nach Prostatakrebsoperationen: Eine Fallstudie

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Abstrakt: Diese Fallstudie berichtet von einem 69jährigen Afroamerikaner, der nach Diagnosestellung und darauf folgender Prostatektomie unter Hitzewallungen litt. Die Messungen beinhalten sowohl die vom Patienten berichteten als auch die physiologisch erhobenen Hitzewallungshäufigkeiten und die Schlafqualität. Die Intervention beinhaltete sieben wöchentliche Sitzungen, in denen hypnotische Entspannung bei der Erleichterung der Hitzewallungen helfen sollte. Die subjektiv berichteten Hitzewallungen gingen nach der Behandlung um 94% zurück. Die physiologisch gemessenen Hitzewallungen gingen 100%ig zurück und die Schlafqualität verbesserte sich auf 87,5%. In Woche 12 hatten sowohl die subjektiv berichteten als auch die physiologisch gemessenen Hitzewallungen um 95% abgenommen und die Schlafqualität verbesserte sich auf 37,5% über der Baseline. Aus diesen Ergebnissen könnte
Therapie de relaxation hypnotique pour le traitement des bouffées de chaleur à la suite d’une chirurgie pour un cancer de la prostate: Une étude de cas

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Résumé: Cette étude de cas porte sur un Afro-Américain de 69 ans qui présentait des bouffées de chaleur à la suite d’un diagnostic de cancer de la prostate et d’une prostatectomie subséquente. Les mesures comprennent la fréquence des bouffées de chaleur et la qualité du sommeil signalées par le patient et mesurées physiologiquement. L’intervention comportait sept (7) séances hebdomadaires de thérapie de relaxation hypnotique visant à atténuer les bouffées de chaleur. Après le traitement, le patient a signalé une diminution des bouffées de chaleur de l’ordre de 94 %; les bouffées de chaleur mesurées physiologiquement ont diminué de 100 %; et la qualité du sommeil s’est améliorée de 87,5 %. À la semaine 12, les bouffées de chaleur autoreportées et mesurées physiologiquement avaient diminué de 95 % et la qualité du sommeil s’était améliorée de 37,5 % par rapport aux valeurs de base, ce qui donne à penser que la thérapie de relaxation hypnotique pourrait représenter une intervention efficace pour les hommes aux prises avec des bouffées de chaleur à la suite d’un traitement pour un cancer de la prostate.

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Primaria d’atención hipnótica para el tratamiento de bochornos después de cirugía para cáncer de próstata: Un estudio de caso

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Resumen: Este estudio de caso reporta sobre un hombre Afroamericano de 69 años de edad que presentaba bochornos después de un diagnóstico de cáncer de próstata y una subsecuente prostatectomía. Las mediciones incluyeron tanto autoreportes como mediciones fisiológicas sobre frecuencia de bochornos y calidad de sueño. La intervención comprendió 7 sesiones semanales de terapia de relajación hipnótica dirigida al alivio de bochornos. Los bochornos autoreportados postratamiento decrecieron 94%; las mediciones fisiológicas de los bochornos decrecieron 100%; y la calidad de sueño mejoró 87,5%. Para la doceava semana, tanto los autoreportes como las medidas fisiológicas de bochornos decrecieron 95% y la calidad de sueño mejoró un 37,5% sobre la línea basal, sugiriendo que la terapia de relajación hipnótica puede ser una intervención eficaz para hombres con bochornos después del tratamiento para el cáncer de próstata.

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