

Hypnotherapy for the Treatment of Persistent Pain: A Literature Review

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Abstract

BACKGROUND: Persistent pain causes a significant decrease in quality of life and increases overall disability more than any other condition. Hypnotherapy is emerging as a treatment option for pain management; examination of this treatment modality and its effectiveness is needed. **AIM(S):** To examine evidence for effectiveness of hypnotherapy to treat persistent pain in adults. **METHOD:** A consolidated review was completed through searching biomedical and life sciences literature databases. **RESULTS:** Results were obtained through appraisal of six identified studies meeting inclusion criteria. Hypnotherapy decreases pain and improves pain-related function and quality of life outcomes to a greater extent than other psychological interventions or usual treatments. Furthermore, it has been shown to be effective in a variety of chronic pain conditions. **CONCLUSIONS:** Current treatment practices fail to alleviate pain adequately; there is sufficient evidence to suggest hypnotherapy as a viable treatment modality for persistent pain. However, more definitive studies are needed for it to be a first-line intervention.

Keywords

pain, complementary and alternative therapies, evidence-based practice, mindfulness

Pain causes the greatest decrease in quality of life and the highest increase in disability, and monthly prevalence is estimated as high as 60% in all age-groups (Henschke, Kamper, & Maher, 2015). Persistent pain is defined as frequent or constant pain that lasts longer than 3 months (Kennedy, Roll, Schraudner, Murphy, & McPherson, 2014). The terms *chronic pain* and *persistent pain* are used interchangeably (Kennedy et al., 2014). The costs associated with persistent pain are estimated to be as high as 3% of a country's GDP (Henschke et al., 2015). In 2011 alone there were up to 100 million Americans who suffered from persistent pain, with costs up to \$635 billion (Institute of Medicine, 2011). Persistent pain tends to be higher among adult women between the age of 60 and 69 years, those who self-report fair or poor health, overweight or obese adults, and those hospitalized within the past year (Kennedy et al., 2014). In those with persistent pain, 67.2% report the pain is always present and 50.5% report their pain to be unbearable and excruciating (Kennedy et al., 2014).

Persistent pain has significant detrimental effects on quality of life as evidenced by many co-occurring psychiatric disorders. Persistent pain is comorbid with depressive disorder in 2% to 61% of cases, dysthymia in 1% to 9%, and bipolar disorder in 1% to 21% (Hooten, 2016). Depression occurs in 50% of people suffering from common pain syndromes such as fibromyalgia, temporomandibular joint disorder, chronic spinal pain,

or chronic abdominal pain and in more than 20% of those who have arthritis, migraine headache, or pelvic pain (Hooten, 2016).

The recent emergence of the nationwide opioid dependency crisis has created an urgency within the medical field to use alternative methods for the treatment of pain management. Treating pain through nonpharmacological methods is warranted by both nursing theory and the biological underpinnings of persistent pain (Hooten, 2016; Pesut & McDonald, 2007). Complementary and alternative medicine has been used increasingly in recent years for treatment of both pain and mental health conditions in patients; in particular, hypnotherapy has been presented as a viable treatment modality. Nurse theorists Pesut and McDonald (2007) argue pain treatment should be guided by identifying discrepancies between what the patient reports and the nurse's clinical observations to create a holistic treatment plan. The pathophysiology of chronic pain is a complex interplay between the central nervous

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system, genetic, psychological, and social factors (Aronoff, 2016).

When considering current nursing theory and the nuanced etiology of persistent pain, clinicians need a broad range of treatment interventions. Evidence-based treatment recommendations for persistent pain include pharmacologic, physical medicine, behavioral medicine, neuromodulation, interventional, and surgical approaches (Rosenquist, 2017). Williams, Eccleston, and Morley (2012) conducted a systematic review of psychological interventions for pain and found cognitive behavioral therapy (CBT) to be a suitable intervention for the management of chronic pain. The authors chose to exclude hypnosis from the review because they felt it did not meet classification as cognitive or behavioral treatment. It is due to this exclusion that the focus of this literature review was placed on the use of hypnotherapy as a treatment modality for the management of chronic pain.

Hypnosis, as defined by the Society of Psychological Hypnosis (2014), is “a state of consciousness involving focused attention and reduced peripheral awareness characterized by an enhanced capacity for response to suggestion” (para. 5). When using this state of consciousness in psychological or medical treatment, it is known as “hypnotherapy” (Society of Psychological Hypnosis, 2014). There is neurological evidence that hypnosis affects regions of the brain associated with pain. Del Casale et al. (2015) performed a meta-analysis of functional neuroimaging studies and found that during hypnosis, suggestions aimed at pain reduction increased activation of the right anterior cingulate cortex, right insula, and left superior frontal gyrus and decreased activation in the right midline thalamic nuclei. These brain regions are associated with pain processing in the central nervous system (Tracey & Mantyh, 2007). The purpose of this literature review is to examine available evidence to determine whether hypnotherapy is a viable treatment modality for persistent pain.

Method

This review sought to include articles with hypnotherapy as the primary intervention in adults with chronic pain and was limited to articles published within the past 10 years, peer-reviewed, written in the English language, and classified as a clinical trial, systematic review, or meta-analysis. The search was conducted in PubMed with Mesh terms, Cumulative Index to Nursing and Allied Health Literature with Expanders: “Apply equivalent subject” and “Apply related words,” and Search Mode: “Boolean/Phrase,” PsychInfo with “Map Term to Subject Heading,” and Cochrane Database. Primary terms used were *chronic pain*, *persistent pain*, or *pain*, *intractable* and *hypnotherapy* or *hypnosis*. Exclusion criteria included pilot or case studies, pediatrics, and not

identifying hypnosis or hypnotherapy as an intervention (i.e., intervention was not called hypnotherapy, although it may have shared similar qualities).

Out of 56 articles identified, only 6 met criteria for inclusion in this review. Two Level 1 meta-analyses of good quality (Adachi, Fujino, Nakae, Mashimo, & Sasaki, 2014; Zech, Hansen, Bernardy, & Häuser, 2017), two Level 2 randomized controlled trials (RCTs) of good quality (Ardigo et al., 2016; Tan et al., 2015), and two Level 2 RCTs of low quality (Baad-Hansen, Abrahamsen, Zachariae, List, & Svensson, 2013). Melnyk and Fineout-Overholt (2011) and the Johns Hopkins Nursing Quality of Evidence Appraisal guided evidence and quality classification (Newhouse, Dearholt, Poe, Pugh, & White, 2007).

Findings

Zech et al. (2017) conducted a meta-analysis to explore the efficacy of hypnosis or guided imagery to reduce symptoms of fibromyalgia. The authors evaluated a total of 9 studies, capturing data for 457 patients. The authors decided to combine hypnosis and guided imagery because of shared intervention qualities and a dearth of studies for review. There was significant heterogeneity between articles and limitations on study designs.

The results of the analysis showed hypnosis had a positive effect on lowering pain in fibromyalgia patients. Hypnosis and guided imagery showed clinically relevant evidence of $\geq 30\%$ and $\geq 50\%$ reductions in pain, mean pain, psychological distress, fatigue, and sleep problems and improved coping at the end of treatment. Hypnosis outperformed guided imagery for improving pain in the $\geq 50\%$ category at the end of therapy. At the 3-month follow-up interval there were $\geq 30\%$ reductions in pain, mean pain, and sleep problems with hypnosis. When comparing CBT versus CBT plus hypnosis, hypnosis had a clinically relevant benefit of reducing psychological distress. Results of the analysis showed hypnosis caused no harm and improved pain more than controls in fibromyalgia patients.

Adachi et al. (2014) conducted a meta-analysis of 12 studies to assess the efficacy of hypnosis for managing chronic pain. There were 669 patients with an average of 11.53 years of various chronic pain conditions. Like Zech et al. (2017), Adachi et al. (2014) faced difficulties in making strong conclusions due to low-quality source articles and significant heterogeneities between studies. However, the meta-analysis had a sufficient sample size and made reasonable recommendations and conclusions.

Adachi et al. (2014) found hypnosis to effectively decrease pain in nonheadache chronic pain conditions. Hypnosis was moderately effective in treating overall

chronic pain compared to care as usual. Hypnosis performed better than other psychological interventions (including CBT), in treating nonheadache chronic pain. Interestingly, active control groups outperformed hypnosis for treating chronic headache pain. Results of the study suggest that hypnosis is safe and an effective intervention for treating chronic nonheadache pain.

Tan et al. (2015) conducted a four-arm RCT with 100 subjects to determine differences between therapist-guided versus home practice hypnosis treatments and maintenance of positive effects. The four study arms equally divided subjects: eight therapist-guided self-hypnosis sessions without recommendations for practice; eight therapist-guided self-hypnosis sessions with recommendations for practice; two therapist-guided sessions with recommendations for practice and weekly phone call practice reminders; and eight sessions of surface electromyography–assisted biofeedback relaxation training as the control group. Dependent variables included pain intensity, pain interference with sleep, hypnotizability, and practice diaries completed at pre- and posttreatment and 6-month follow-up.

Despite limitations, such as homogeneous population, high dropout rate, and similar control, the study provided quality evidence. The results showed that all four groups had significant improvements in pain intensity, pain interference, and sleep quality. Hypnotizability increased response, although not significantly, and hypnosis (52%) had a greater reduction in pain intensity compared to biofeedback (36%). The pain relief difference between hypnosis and biofeedback was clinically meaningful but not statistically significant. Additionally, there was no difference between hypnosis groups, thus suggesting that two therapist-guided sessions were effective hypnosis treatment. The results of this RCT show that for those willing to engage, hypnosis provides significant and sustainable (up to 6 months) reductions in pain.

In France, Ardigo et al. (2016) conducted a two-arm design RCT to assess if hypnosis improved the management of chronic pain in older hospitalized patients. The study arms were hypnosis ($n = 26$), 30-minute sessions once weekly for 3 weeks, and massage ($n = 27$) for the same time and intervals. The limitations of the study include potential selection bias while recruiting, patient attrition, underpowered sample, and relatively short hypnosis intervention compared to other studies. Compared to massage, hypnosis significantly reduced pain after each session, provided a more prolonged decrease in pain, and improved mood. Again, hypnosis did not cause any harm. Results indicate hypnosis is a safe intervention for treating chronic pain in older hospitalized patients.

Mendoza et al. (2017) conducted a randomized controlled crossover clinical trial comparing the effects of the Valencia model of waking hypnosis combined with

CBT versus an educational control on the treatment of pain, fatigue, and sleep problems in patients with cancer or posttreatment cancer survivors ($n = 44$). The separate treatment interventions occurred over four didactic sessions with posttreatment measurement immediately following the final session and 3 months postintervention. Blinded research assistants captured outcome measures.

The study contained several limitations and bias. There was only one unblinded clinician, the study's primary author, who provided both the intervention and control. Additionally, it is unclear if outcomes were from CBT or hypnosis; however, the intervention outperformed the educational control. The study results are preliminary findings and evidence to support replication with greater control measures in place, such as the Valencia model of waking hypnosis CBT versus CBT alone. Future studies should avoid a crossover design given that the intervention is focused on self-management, which makes the control intervention irrelevant when administered after the active intervention.

Baad-Hansen et al. (2013) conducted an RCT assessing the correlation of pain and quantitative sensory testing (QST) and the effects of hypnosis on QST in persistent idiopathic orofacial pain. The study was an interesting look at potential objective measures of the pain experience. However, it provided limited insight concerning hypnosis treatment. QST data had little evidence to support it as a measure of pain, and the measurements were not standardized with internationally recognized QST recommendations (recommendations published after the conclusion of the study). The authors found no influence of hypnosis on QST data. However, data captured on the clinical reports of pain from this study were reported in Abrahamsen, Baad-Hansen, and Svensson, (2008) and included in Adachi et al.'s (2014) meta-analysis.

Discussion

The majority of the studies had direct application to answering whether or not hypnotherapy is an evidence-based treatment for persistent pain. There was a significant amount of variance between the studies but enough consistencies to draw moderate conclusions. Hypnotherapy decreases pain and improves pain-related function and quality of life outcomes to a greater extent than other psychological interventions or usual treatments (Adachi et al., 2014; Ardigo et al., 2016; Tan et al., 2015; Zech et al., 2017). A primary benefit of hypnosis over other interventions is the ability to improve pain with brief clinic visits and self-practice at home (Tan et al., 2015). Furthermore, it has been shown to be effective in a variety of chronic pain conditions, for men and women of all

adult ages, with no safety concerns (Adachi et al., 2014; Ardigo et al., 2016; Tan et al., 2015; Zech et al., 2017).

Persistent pain conditions are difficult to treat and cause marked distress in people. Currently, the United States is experiencing an opioid addiction epidemic, worsened by the overprescription of opiates for treatment of pain conditions (Frieden & Houry, 2016). Health care professionals should use all viable options for treating persistent pain. The evidence supports the use of hypnotherapy as a complementary treatment to traditional methods of care for persistent pain.

It remains unclear what elements of hypnotherapy provide clinical benefit and the optimal delivery method. Future expert panels or research should focus on identifying a consistent hypnotherapy model for research purposes, as well as acceptable control methods. An internationally recognized hypnotherapy model that identifies minimum necessary elements of hypnosis will decrease heterogeneity and produce more consistent data for meta-analysis. Hypnotherapy has the potential to be recommended as a non-pharmacological first-line treatment for persistent pain.

Limitations

There are several limitations to this literature review. First, high levels of variance between source articles decreased the confidence of conclusions. For example, no two studies used the same hypnotherapy model, few shared the same persistent pain condition, and there was wide variability of controls. Another limitation is that the search method may not have identified all relevant studies. Finally, conclusions relied on those made by the original authors, and there was no reassessment or validation of data.

Conclusion

Persistent pain is a major health issue across the world and current treatment practices are failing to alleviate people's suffering. Hypnotherapy is a viable adjunctive therapy for the treatment of pain. It has been shown to be a safe intervention for decreasing pain across many different pain conditions. Analysis of these individual studies provides evidence to support further and more robust research into use of hypnotherapy for management of persistent pain and provides evidence to support its use as a complementary practice.

Authors' Note

The views expressed in this article are those of the authors and do not reflect the official policy or position of the Department of the Army, the Department of Defense, or the U.S. Government.

Author Roles

Douglas A Taylor: introduction, clinical practice issue, clinical question, co-methods, co-literature appraisal, co-literature synthesis, discussion, and summary; Kimberly A Genkov: abstract, co-methods, co-literature appraisal, and co-literature synthesis.

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