



Review

Hypnosis in Paediatric Respiratory Medicine

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EDUCATIONAL AIMS

- To explain how hypnosis can be used as therapy within a medical practice.
- To describe how hypnotherapy can be integrated into paediatric respiratory medicine.
- To understand how hypnosis is helpful in the treatment of functional respiratory disorders.

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SUMMARY

Hypnotherapy is an often misunderstood yet effective therapy. It has been reported to be useful within the field of paediatric respiratory medicine as both a primary and an adjunctive therapy. This article gives a brief overview of how hypnotherapy is performed followed by a review of its applications in paediatric patients with asthma, cystic fibrosis, dyspnea, habit cough, vocal cord dysfunction, and those requiring non-invasive positive pressure ventilation. As the available literature is comprised mostly of case series, retrospective studies, and only a single small randomized study, the field would be strengthened by additional randomized, controlled trials in order to better establish the effectiveness of hypnosis as a treatment, and to identify the processes leading to hypnosis-induced physiologic changes. As examples of the utility of hypnosis and how it can be taught to children with respiratory disease, the article includes videos that demonstrate its use for patients with cystic fibrosis.

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INTRODUCTION

Psychological therapies such as cognitive behavioral therapy, meditation and hypnotherapy, are nowadays seen as valuable tools in many medical conditions, because of their utility in helping patients to use the mind to influence bodily processes. This has probably been the result of an increasing recognition of the importance of a biopsychosocial model in health and disease. However, in contrast to cognitive behavioral therapy, which has a widespread use in paediatrics, the value of hypnotherapy is still ignored by many paediatricians. Several reasons may account for this, including misconceptions about the true nature of hypnosis, unfamiliarity with this therapy, and lack of evidence for its application due to a paucity of well-designed randomized controlled trials.

Hypnotherapy can also be used in a variety of paediatric pulmonary conditions, as shown by many case reports. The aim of

this article is to inform the reader of current applications of clinical hypnosis in paediatric pulmonology by discussing the literature and to increase familiarity with this therapy. The use of hypnotherapy in other areas of paediatrics is also discussed briefly.

WHAT IS HYPNOTHERAPY?

Hypnosis can be thought of as involving the three aspects of 1) focused attention, 2) dissociation from the usual state of awareness, and 3) heightened responsiveness to suggestions [1]. Hypnotherapy utilizes the hypnotic state to effect a clinical change. Contrary to impressions resulting from portrayals in television or movies, clinical hypnosis is not done against the will of the patient; it is virtually always done voluntarily. Patients are not asleep during hypnosis; and usually are aware of the interaction. Therefore, it is important that patients agree to the treatment.

Focused Attention

In the movies, as well as during early use of hypnosis, focused attention was achieved by asking patients to look at the swinging pendulous pocket watch of the hypnotist. This is called induction. Instead of the pocket watch, most hypnotherapists today coach

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patients to utilize their imagination. For example, patients can be asked to picture being in a place of their choosing. This can be a place where they have been, to which they would like to go, or imaginary. Once the patients imagine being there, the therapist can ask about what the patients see, hear, smell, feel, and taste. Using all five senses helps patients to focus more intently and prompts utilization of whichever is the strongest imagined sense of an individual patient.

Dissociation

Focusing on the hypnotic induction methods such as being in an imagined place, progressive relaxation from head to toe, or slow deep breathing, helps achieve dissociation from the usual state of awareness. Such dissociation can be conceptualized by thinking of it as a form of daydreaming. In fact, most people enter such a state frequently. For example, a child at play might speak and act out different characters. Adolescents may fantasize about their future. Adults may drive some distance deep in thought, and later not be able to remember what occurred on the road while they were driving.

Responsiveness to Suggestions

Suggestions can guide thoughts, actions, or beliefs through words and often non-verbally. When patients' thoughts are occupied through the exercise of induction and dissociation, they are more receptive to suggestion, as they are less likely to develop contrary thoughts. Suggestions also are commonplace without use of formal hypnosis. Retailers use suggestion through employment of captivating advertisements in order to persuade customers to purchase their products. Some politicians capture their audience's imagination with their oratorical skills, which helps the listeners become more receptive to suggestions. Suggestions that are direct and do not involve redirecting attention are more apt to be rejected, such as when parents suggest that their children perform a chore. In hypnotherapy, suggestions are used by the practitioner to help patients control their symptoms or improve their self-perception [1]. Because children generally are more suggestible than adults, [2] especially in paediatrics hypnosis can be a powerful therapeutic instrument.

Self-Hypnosis

An important aspect of hypnotherapy is teaching self-hypnosis. Thus, patients can practice hypnosis as frequently as they choose. A technique that can be taught during the first hypnosis instruction session is the use of a "relaxation sign," such as a personalized hand gesture. The simple use of this gesture at any moment can prompt restoration of focused attention and hypnotic relaxation. After doing this patients can provide their own set of suggestions, which can further ameliorate symptoms. Thus, the therapist arms patients with a tool that can be used outside of scheduled encounters with the patients [3].

Initial hypnosis training with patients presenting to a medical office or for a medical procedure typically requires 15–30 minutes, including in emergency situations. If indicated, subsequent reinforcement of the hypnosis work can take even less time and incorporated into brief follow-up medical visits [3]. Hypnosis work with mental healthcare professionals, on the other hand, often is provided during longer sessions. At some medical practices, instruction in hypnosis has been provided by ancillary staff such as nurses, social workers, or child life specialists. For example, one paediatric pulmonary center reported the outcome of hypnotherapy offered by a physician as compared to a social worker. Both individuals had been trained previously by a professional hypnosis

organization, and both achieved a similar success rate of 82% improvement or resolution of their patients' symptoms [4]. For interested physicians, hypnosis training workshops sponsored by professional organizations are held on a regular basis around the world.

HOW CAN HYPNOSIS BE USED IN RESPIRATORY MEDICINE?

The potential utility of hypnosis in paediatric respiratory medicine has been demonstrated through case reports, case series, and chart reviews, which suggest that hypnosis can be useful in the treatment of primary organic and well as functional disorders. Unfortunately, data on the effectiveness of hypnotherapy in paediatric respiratory disorders are scarce, with just one small study of children with asthma, as the only published randomized controlled trial in this area [5].

Organic Respiratory Disorders

In 2007 a review was published on the use of hypnotherapy in asthma [6]. It was concluded that hypnosis has beneficial effects on the subjective aspects of asthma, which include symptom frequency and severity; coping with asthma-specific fears; managing acute attacks; and frequency of medication use and health visits. Hypnosis may also be efficacious for decreasing airway obstruction and stabilizing airway hyper-responsiveness in some individuals. The review stressed the need for more randomized, controlled studies with larger patient populations. In the only paediatric controlled trial that has been reported to date, 28 patients were divided into four groups (hypnosis, suggestion only, attention placebo, and a traditional control group). At 1-month, 6-month, and 2-year follow-ups, no significant differences emerged between groups on physiological measures of pulmonary function. Children taught to use self-hypnotic techniques, however, reported fewer emergency room visits and fewer missed school days relative to the traditional control and waking suggestion groups but not compared to the attention control group [5]. The results need to be interpreted with caution due to the small sample size.

Another organic disorder where hypnotherapy has been applied is cystic fibrosis (CF). Belsky and Khanna reported a small controlled trial of twelve children with CF, who used self-hypnosis to affect both psychological and physiological aspects of their disorder. Use of hypnosis was associated with a reduction in anxiety as well as an increase in peak expiratory flow rates [7]. In a case series of 49 patients with CF who agreed to use self-hypnosis to help with their disease 86% were successful at achieving their predetermined goals. Such goals included relaxation, relief of procedural pain, headaches, medication palatability, and other symptoms associated with their disease. None experienced worsening of their symptoms [8].

Recently, Delord et al., [9] described the use of hypnosis as a tool to acclimatize children to non-invasive positive pressure ventilation (NPPV). In nine children, aged 2 to 15 years old, a median of three sessions was needed for overnight NPPV acceptance and the 6-months compliance with NPPV was excellent. The authors concluded that medical hypnosis may be particularly useful in children with anticipatory anxiety resulting from previous traumatic experiences such as a tracheotomy.

Functional Respiratory Disorders

The major functional respiratory disorders are dyspnea, vocal cord dysfunction, habit cough, and chest pain. Functional dyspnea includes hyperventilation, exertional dyspnea unrelated to physiological limitations, and sighing dyspnea [10]. Hypnosis has been

reported to have been used for treatment of each of the functional respiratory disorders with success. Often the most effective technique is simply teaching how to induce relaxation with hypnosis through use of relaxing imagery. This alone has been reported to alleviate many symptoms of anxiety, which is associated with the development of persistence of dyspnea, vocal cord dysfunction, and chest pain [11].

In a case series, 16 patients with chronic dyspnea, who had normal pulmonary function tests and failed medical treatment, were taught self-hypnosis. As a part of their treatment they were taught to imagine their airways to appear “healthy” whenever shortness of breath occurred. Symptoms resolved in 81% of patients and improved in the remaining 19%. Seven patients had been using chronic anti-inflammatory medication prior to implementation of hypnosis, and of those, two were able to stop using them [12].

For habit cough, it was shown in a case series of 56 paediatric patients treated with hypnosis that 90% achieved resolution of their symptoms within a month of introduction of hypnosis [13].

No data have been reported regarding use of hypnosis in the treatment of functional chest pain in children. A controlled trial of 28 adult patients with non-cardiac chest pain found that 80% of patients undergoing hypnotherapy experienced improvement in their pain as compared 23% of those receiving supportive therapy only. There was a significant decrease in the pain score and medication use for the patients treated with hypnosis [14]. A two year follow up revealed that there was an increase to 93% in the hypnosis group that reported improvement in pain and quality of life compared to no further improvement in the supportive therapy group [15].

Another important use of hypnosis in the treatment of functional disorders is to help address the underlying psychological cause(s) of the symptoms. Not only can hypnosis be very effective when applied directly to control symptoms of functional origin, it also can be used to help the patient uncover why the symptoms developed in the first place. For example, one may uncover stresses at home, at school, or from the past. Addressing of the underlying psychological issue(s) has been associated with the resolution of symptoms in some paediatric patients with respiratory symptoms [16]. In a meta-analysis by Flammer regarding the efficacy of hypnotherapy on functional disorders it was found that hypnosis directed at emotional and underlying factors in addition to symptoms was more effective than hypnosis directed at symptoms only [17]. As the latter analysis included mainly adult data, further studies will need to be done to verify whether children respond similarly.

IN WHAT OTHER AREAS OF PAEDIATRICS CAN HYPNOSIS BE APPLIED EFFECTIVELY?

Hypnosis is widely, and often successfully used in a variety of other paediatric disorders to modify symptoms, behavior and perceptions, but, like in paediatric pulmonology, evidence comes mainly from case reports and uncontrolled studies [18]. Only in the field of acute and chronic pain have well-designed trials been performed. A review of 13 controlled trials by Accardi and Milling in 2009 concluded that hypnosis is effective in reducing pain experienced by children and adolescents undergoing invasive medical procedures. With almost uniform consistency, hypnosis and hypnotic-like imagery were shown to be more effective than no treatment, standard medical care, or attention-control conditions in alleviating the discomfort associated with bone-marrow aspirations, lumbar punctures, voiding cystourethograms and post-surgical pain [19]. More recently, a systematic review was published on the use of hypnosis in children with chronic pain due to functional abdominal pain or irritable bowel syndrome [20]. All

three trials included in this review showed significantly greater improvement in abdominal pain scores among children receiving hypnosis, with one trial reporting beneficial effects sustained after 5 years of follow-up. Hypnotherapy also resulted in significant improvement in quality of life and reductions in school absenteeism. It was concluded that the therapeutic effects of hypnotherapy seem superior to standard medical care in children, but that it remains difficult to quantify exact benefits.

CONCLUSION

Though limited, evidence supports the use of hypnosis as both an adjunct to and as a primary treatment in paediatric respiratory medicine. These promising results will hopefully prompt researchers of hypnosis to devote more resources to the performance of highly powered randomized controlled trials. Studies designed similarly to those used in pain should give useful results. In addition to studying the effectiveness of hypnosis as a treatment, researchers might investigate the physiologic changes caused by hypnosis and how those changes occur. Broadening the understanding of hypnosis in such ways would help promote hypnotherapy as an effective treatment tool among clinicians and the general population.

RESEARCH DIRECTIONS

Hypnosis in Paediatric Respiratory Medicine

- Highly powered randomized controlled trials of hypnotherapy in the treatment of paediatric respiratory disorders are needed in order to substantiate its clinical efficacy, which has been suggested in numerous published patient case series and studies.
- Future studies should compare the outcome of different types of hypnosis techniques applied to paediatric patients with respiratory disorders.
- Clinical changes as a result of hypnotherapy should be correlated with physiologic changes in the respiratory and neurological systems, in order to understand better its mechanism(s) of action.

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APPENDIX A. SUPPLEMENTARY DATA

Video Examples of Hypnosis for Children with Respiratory Disease

As examples of the utility of hypnosis and how it can be taught to children with respiratory disease, the following series of videos demonstrate its application for patients with CF. All of the featured patients (and parents of the minors) gave permission for publication of their videos. These videos are presented for demonstration purposes only. Therapy with hypnosis should be offered only by a healthcare provider who has received adequate training and supervision <http://dx.doi.org/10.1016/j.prrv.2013.09.002>.

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