

Review Article

Application Of Hypnosis In Dentistry: A Review

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ABSTRACT

Dental fear is a universal phenomenon justifying the increasing relevance of psychology and the behavioural sciences to dental training and clinical practice. Pharmacological sedation has been used more and more over the past two decades, in order to relieve dental anxiety and phobia and let the patient face oral surgery safely. Hypnosis is a still underused but powerful non-pharmacological tool in dentistry. It provides an effective sedation whilst maintaining patient collaboration, but it also may help patients recovering from dental anxiety and phobia. The purpose of this article is to review the various applications of hypnosis in dentistry.

Keywords: Hypnosis, hypnotherapy, hypnodentistry.

Introduction

Odontophobia (dental fear) is a "unique phobia with special psychosomatic components that impact on the dental health of the odontophobic persons".¹ Dental phobia is a well-known specific phobic disorder that usually expresses itself in verbal utterances of fears connected with dental care procedures, in stressful and interruptive behaviors during dental treatment, and in avoidant behaviors concerning dental management opportunities.² There are various components of dental fear like fear of the unknown fear of pain, fear of swelling, fear of tooth loss, fear of the "drill", fear of the "pick", fear of "nerve" removal, fear of gagging and fear of x-rays.³ These patients have complaint of extreme anxiety prior to a simple check-up and repeatedly request tranquilizers to help them cope. Hypnosis can easily alleviate the tension, nervousness and unreasonable fear of pain often exhibited by these patients. Hypnodontics is the art and science of using hypnosis to induce comfortable and pain free dental visits. Hypnosis is used to reduce stress and induce anesthesia so that less medication is used.⁴ Throughout history, hypnosis has been used for various effects ranging from hysteria to memory recall, but overall it has been shown to be an effective relaxation mechanism. For certain patients

hypnosis may offer an inexpensive, noninvasive supplemental procedure to reduce the anxiety associated with dental visits.⁵

Hypnosis ???

Spiegel in 1972 define "Hypnosis as an altered state of awareness in which the individual withdraws his peripheral awareness and concentrates all attention on a focal goal... is related to the ability to concentrate in an attentive, responsive manner, even to the point of dissociation". Hypnotists can help to achieve a state where one can more readily access subconscious mind, and then give suggestions to help you visualize what it is you want to accomplish. Hypnosis is characterized by a trance state. Trance is a state of mind in which our normal awareness of the outside world is reduced, and our attention is focused on some activity, physical stimulus, image, fantasy, thought or feeling. People enter this state spontaneously everyday, for example when being lost in thought or day dreaming, working out in the gym, reading, listening to music, surfing the web, or driving "on autopilot". Hypnosis formalises this process of entrancement and intensifies it. The person being hypnotised is given a series of instructions which are intended to assist them in achieving a trance state.⁶

Hypnosis is a temporary condition of altered perception in the subject which may be induced by another person and in which a variety of phenomena may appear spontaneously or in response to verbal or other stimuli. These phenomena include alterations in consciousness and memory, increased susceptibility to suggestion, and the production in the subject of responses and ideas unfamiliar to him in his normal state of mind. Further phenomena such as anaesthesia, paralysis and the rigidity of muscles, and vasomotor changes can be produced and removed in the hypnotic state.⁷

According to Herbert Spiegel Hypnosis is not sleep. Whatever sleep is, hypnosis is not in an operational sense is, Hypnosis is a response to a signal from another or to an inner signal, which activates a capacity for a shift of awareness in the subject and permits a more intensive concentration upon a designated goal directionto put it succinctly. Hypnosis is an altered state of attention which approaches peak concentration capacity. Andre M . Weitzenhoffer and Ernest R . Hilgard described that hypnosis is largely a question of your willingness to be receptive and responsive to ideas, and to allow these ideas to act upon you without interference. These ideas we call suggestions. According to Peter Blythe Hypnosis is a consent state of physiological relaxation where the subject allows the critical censor of the mind to be bypassed to a greater or lesser, degree....we could even go so far as to say that hypnosis is "preventive psychological medicine." F .L. Marcuse described hypnosis as an altered state of the organism originally produced by a repetition of stimuli in which suggestion no matter how defined is more effective than usual. Such a definition as this is admittedly ringed with ifs and buts and question of how, what and why. and is more descriptive then explanatory.⁸

History of Hypnosis

Hypnosis is by no means a recent discovery. Hypnosis has been practiced, researched, investigated and debated for centuries. It has evolved from beliefs of mystical and divine intervention to theories of magnetic force and, criticisms for the use of hypnosis as a form of treatment have occurred since ancient

times. In order to gain perspective on the procedure and its feasible applications, hypnosis' past should first be examined. In 1843 James Braid coined the term hypnosis, but the practice of hypnosis has been around since antiquity. Principles of hypnosis have been traced back as far as the Ancient Egyptians who used a form of it in dream temples (Waterfield, 2004). A stele, which is an upright inscribed stone slab, was discovered in 1972 by Charles Muses. It depicted a scene of a trance induction that occurred during the rule of Ramses II (Lockert, 2001). Even Socrates and some of his followers alluded to the healing power of words (Muses & Young, 1972). Evidence indicating the use of hypnosis or hypno-related procedures dates back over a thousand years BC. One of the more familiar names in hypnotism is Franz Anton Mesmer. Mesmer gained notoriety for his elaborate hypnotic practices, but several physicians, priests, and alchemists developed principles of hypnotism prior to his birth. Two hundred years before Mesmer, in 1529, a Swiss alchemist and physician, Paracelsus, suggested that a heavenly, magnetic fluid played a role in disease and healing (Gezundhajt, 2007). A few years later, a man by the name of Girolamo Cardano published material related to hypnosis. Most researchers account Cardano, a medieval Italian mathematician who lived from 1501 to 1576, with the first reported case of self-hypnosis. In 1551, Cardano printed *De Subtilitate Rerum* in which he described feelings of trance and out of body experience (Gezundhajt, 2007). The early 1500's marked a period of discovery and theorizing of hypnosis before it was even known by that term. Another predecessor to Mesmer was Father Johann Joseph Gassner (1729-1779). Gassner is considered the real precursor to modern hypnotherapy (Burkhard, 2005). Gassner practiced exorcisms by intentionally provoking the symptoms, then "curing" the symptoms via verbalization with the patient. Although his actions are not what a lay person would associate with hypnosis, Gassner's methods of treatment demonstrated the potential power of words over psychological and physical detriments. Mesmer (1734-1815), whose name is the root of the English word mesmerize, was born into a strongly Catholic family. He initially entered a Jesuit college

but later left the church to study medicine. He graduated from the University of Vienna as a Doctor of Medicine. Later, with influence from Father Maximilian Hell, Mesmer formulated the idea of mineral and animal magnetism (Lockert, 2001). In 1774, Mesmer observed Father Hell as he put magnets on patients to treat physical symptoms. In 1775, Mesmer expounded on Hell's methodology. Mesmer wrote a document claiming the magnets could be replaced with nearly any inanimate object (Crabtree, 1993). In 1777, Mesmer met Johann Gassner and observed the priest's ability to cure without magnets. Subsequently, Mesmer discarded the belief that the magnets held supernatural powers and instead switched his theories to nature-based principles (Forrest, 1974).

A few years later in 1784, Marquis de Puysegur stumbled across what we modernly consider a hypnotic state. While attempting to enter a young peasant into a trance state in order to treat him for fever and congestion, Puysegur did not observe the convulsive state that was common with the Mesmerian practices of the time. Puysegur instead observed that the young man had entered a deep state of relaxation that resembled somnambulism (Crabtree, 1993). Puysegur's observations were contrary to what was commonly observed with trance induction of the time, but resembled the more modern idea of a hypnotic state. Beyond the ideas of magnetism stood an Indo-Portuguese monk by the name of Abbe Jose Custodio de Faria (1746-1819). De Faria hypothesized that a magnetizer's will has no effect on the patient and the presence (or lack of) magnetic fluid also had no effect. De Faria hypothesized the hypnotic trance was created by a fascination that a subject felt towards the inducer and the persuasion and coercion that had been implemented (Gezundhajt, 2007). De Faria was an early theorist on the strength of rapport. His theories and practice attempted to disprove the need for physical objects in order to induce a trance. A few years later, a Scottish surgeon named James Esdaile (1808-1859) was in charge of a hospital in India and began to utilize the methods of hypnosis. Just prior

to the discovery of chloroform, Esdaile used mesmeric analgesia very successfully in a number of procedures and presented his results to the government. After the release of his results, Esdaile was placed in charge of a small hospital in Calcutta where he performed thousands of procedures using Mesmeric analgesia (Gezundhajt, 2007). The Indian natives flocked to Esdaile out of respect and admiration of his treatments. James Esdaile is one of many pioneers who brought hypnosis into medical hospitals. James Braide, also a Scottish surgeon, helped push hypnosis into more modern procedures. Although he also dabbled in phrenology, he is most credited as the "father of hypnotism." He derived the term hypnosis from the Greek word for sleep.

It was Braid's belief that hypnosis did not require any direct action by the hypnotist on the subject, and catalepsy would occur in hypnotized subjects. Braide felt that hypnosis should only be used in the medical and dental professions as an addition that could help cure several ailments (Gezundhajt, 2007). Braide not only coined the term hypnosis but also postulated that hypnosis could be induced without any physical contact between the hypnotist and the patient. One of the theorists on the idea of suggestibility was a Frenchman, Auguste Ambroise Liebeault (1823-1904). He was a country doctor who used information from the famed brain specialist Paul Broca. Liebeault believed that about ninety-five percent of people are hypnotizable and that magnetic medicine is simply the power of the imagination (Bernheim, 1889). Today, much of the research on hypnosis has focused on who is hypnotizable and what characteristics may distinguish those who are hypnotizable from those who are not. More recently, Sigmund Freud (1856-1939) practiced hypnosis in Vienna. Initially Freud felt hypnosis was simply ordinary sleep (Gravitz, 2004). However, as Freud continued his practice he came to believe that hypnosis was nothing like nocturnal sleep or drug induced sleep. According to Freud, during hypnosis changes can occur and a person is capable of mental functions that they are incapable of during normal sleep.^{2,5}

Hypnosis for the Public

Hypnosis is a procedure during which a health professional or researcher suggests that a client, patient, or subject experience changes in sensations, perceptions, thoughts, or behavior. The hypnotic context is generally established by an induction procedure. Although there are many different hypnotic inductions, most include suggestions for relaxation, calmness, and well-being. Instructions to imagine or think about pleasant experiences are also commonly included in hypnotic inductions. People respond to hypnosis in different ways. Some describe their experience as an altered state of consciousness. Others describe hypnosis as a normal state of focused attention, in which they feel very calm and relaxed. Regardless of how and to what degree they respond, most people describe the experience as very pleasant. Some people are very responsive to hypnotic suggestions and others are less responsive. A person's ability to experience hypnotic suggestions can be inhibited by fears and concerns arising from some common misconceptions. Contrary to some depictions of hypnosis in books, movies or on television, people who have been hypnotized do not lose control over their behavior. They typically remain aware of who they are and where they are, and unless amnesia has been specifically suggested, they usually remember what transpired during hypnosis. Hypnosis makes it easier for people to experience suggestions, but it does not force them to have these experiences. Hypnosis is not a type of therapy, like psychoanalysis or behavior therapy. Instead, it is a procedure that can be used to facilitate therapy. Because it is not a treatment in and of itself, training in hypnosis is not sufficient for the conduct of therapy. Clinical hypnosis should be used only by properly trained and credentialed health care professionals (e.g., licensed clinical psychologists), who have also been trained in the clinical use of hypnosis and are working within the areas of their professional expertise. Hypnosis has been used in the treatment of pain, depression, anxiety, stress, habit disorders, and many other psychological and medical problems. However, it may not be useful for all psychological problems or

for all patients or clients. The decision to use hypnosis as an adjunct to treatment can only be made in consultation with a qualified health care provider who has been trained in the use and limitations of clinical hypnosis.⁹

Hypnodontics

"Doctors, for over 170 years, have been using the power of the mind to help people with dental issues. The earliest reported case I have found so far dates back to 1837 where a French dentist (Oudet) used hypnoanesthesia to perform a dental extraction and then in 1847 two more pioneering French doctors (Ribaud and Kiara) used hypnosis for anesthesia in order to remove a tumor of the jaw. Moving forward about 100 years, there was a landmark publication on the use of the power of the mind (*hypnosis in this case*) which was published in 1950. The book was titled *Psychosomatics and Suggestion—Therapy in Dentistry* and it was written by Jacob Stolzenberg, D.D.S. In 1958 Dr. S. Irwin Shaw published a book titled *Clinical Applications of Hypnosis in Dentistry*. An interesting thing about Shaw's approach is that he believed that it is often possible to use hypnotic suggestions without any of the usual "induction" rituals that are used to guide people into trance. Incidentally, in between the publication of these two landmark books, the term "hypnodontics" (hypnosis for dentistry) was coined in 1956."¹⁰ Perhaps the greatest blessing of technological advancement in the 20th century was the improved routine dental therapy. There is a tradition of using hypnosis and mesmerism to ameliorate the agony, pain and dread associated with dental treatments. The effects of dental anxiety include rigid and restless patient in the dental chair. One adult out of three has a mild-to-severe phobia of dental treatment procedures. According to acknowledgements from many dentists, dental hypnosis can greatly reduce the stress associated with routine dentistry. Moreover, dental hypnosis can be extremely rewarding and less strenuous for a medical practitioner. Similarly hypnosis plays a role in emergency therapy like in the case of a patient diagnosed with dental abscess.¹¹

Use/Categories of hypnosis in dentistry:

The use of hypnosis in dentistry falls into two categories:

1. Therapeutic
2. Operative

Therapeutic uses:

1. Relaxation of the client.
2. Removing of the client's anxieties, tensions, fears, and phobias of discomfort and pain.
3. Helping the client to maintain his or her comfort level during long (or short) periods of dental work.
4. Aiding the client in fully accepting necessary orthodontic or prosthetic devices recommended by the dentist or orthodontist.
5. Helping the client to become accustomed to orthodontic or prosthetic devices.
6. Developing positive habits for client's personal care of teeth and gums - so that client can play a pro-active role in his or her own dental care.
7. Eliminating or modifying objectionable dental-related habits or behaviour patterns including nail biting, finger chewing, thumb sucking, teeth sucking, tongue thrusting, abnormal swallowing patterns, bruxism (grinding of teeth) and smoking.
8. Empowering the client to feel comfortable in asking the dentist any key questions to be certain that the client has all the necessary information for complete understanding of all procedures and possible options.

Operative uses include:

1. As with the therapeutic uses, we, of course, use hypnosis in operative procedures for relaxation of the client.
2. Again, as with the therapeutic uses, we use hypnosis for removing the client's anxieties, tensions, fears and phobias of discomfort and pain.
3. Other operative uses include reducing the anaesthesia or analgesia (Sometimes, hypnosis is used as total anaesthesia and is frequently used as partial anaesthesia).
4. Combining with or substituting for pre-medication in general anaesthesia.

5. Control of salivation.
6. Control of bleeding.
7. Preventing gagging and nausea.
8. Reducing or eliminating client fatigue.
9. Amnesia, if necessary, for unpleasant procedures.
10. Postoperative analgesia, as necessary.
11. Reduction of postoperative swelling, discomfort and shock.
12. Promotion of postoperative healing and recovery.¹²

Hypnosis and Pain Control

Clinical outcome studies on acute and chronic pain as well as neurophysiological studies in the laboratory have demonstrated that hypnosis is effective over and above placebo treatments and that it has measurable effects on activity in brain areas known to be involved in processing pain.¹³

Basker M A et al made Random allocation of 47 patients to one or other prophylactic measure. This was followed by monthly assessments and independent evaluation of 1 year of continuous care. Criteria of improvement were the number of attacks per month, number who had Grade 4 attack, and complete remission. Results showed that the number of attacks and the number who suffered blinding attacks were significantly lower for the group receiving hypnotherapy than for the group receiving prochlorperazine. For the group on hypnotherapy, these 2 measures were significantly lower when on hypnotherapy than when on previous treatment. Prochlorperazine seemed about as effective as previous treatment. 10 out of 23 patients on hypnotherapy achieved "complete remission" during the last 3 months of the trial as opposed to only 3 out of 24 on prochlorperazine.¹⁴

Abdeshahi et al evaluated the effect of hypnosis on haemorrhage, pain and anxiety during the extraction of third molars. 24 female and male volunteers were included. Hypnosis was induced by one of the two methods, either fixing the gaze on one point or Chiasson's technique; both these methods are appropriate for patients in the dental chair. The Spielberger State-Trait Anxiety Inventory was used to determine patient anxiety levels before hypnosis and anaesthesia.

Subjects who underwent hypnosis, only two subjects (8.3%) reported pain after induction of hypnosis. In the local anaesthetic group, 8 subjects (33.3%) reported pain. Pain intensity in the two groups at 5- and 12-h post-operatively exhibited significant differences. In the hypnosis group, 10 patients (41.7%) took analgesic medication; in the local anaesthesia group, 22 patients (91.7%) took the analgesic medication ($P = 0.0001$). Results of the study showed that hypnosis can effectively reduce anxiety, haemorrhage and pain.¹⁵

In 2007 Castel treated 55 patients suffering from fibromyalgia with hypnosis. The first experimental group was treated with hypnosis along with relaxation suggestions, the second group received hypnosis plus analgesia suggestions, and the third was treated with relaxation alone. These results showed that the greatest relief in pain intensity and in the sensorial dimension of pain was achieved by the group that received hypnosis along with analgesia suggestions, followed by the group receiving hypnosis plus relaxation suggestions.¹⁶

Hypnosis in Anxiety Disorders

Anxiety is a psychological and physiological state characterized by cognitive, somatic, emotional and behavioural components. These components combine to create an unpleasant feeling that is typically associated with uneasiness, apprehension, fear or worry.¹⁷

Management of anxiety disorders may include psychotherapy, pharmacotherapy or both. Hypnosis, and in particular self-hypnosis, plays a very useful part in the treatment of anxiety disorders. Principally hypnosis is used to train the patient in cued rapid relaxation to be applied in the anxiety-provoking situation, as well as assisting in change in perception about the nature of the perceived threat and the patient's confidence in their ability to cope with that situation. A detailed review of the various uses of hypnosis appears in Stanley. When patients use self-hypnosis arousal reduction and relaxation it adds to their confidence in coping and their sense of self-control. They are able influence what they previously thought unalterable. This shifts their locus of control beliefs and increases their sense of self-efficacy.^{7,18}

Smoking Cessation and Hypnosis

The rationale for hypnotherapy as a useful adjunct for smoking cessation is that, by acting on underlying impulses, it may weaken the desire to smoke, strengthen the will to stop or improve the ability to focus on a treatment programme by increasing concentration. Many different hypnotherapy techniques have been employed but the most frequently used approaches are variants of the 'one session, three point' method developed by Spiegel. This method attempts to modify patients' perceptions of smoking by using the potential of hypnotherapy to induce deep concentration. During the session the smoker is instructed that:

- a) Smoking is a poison,
- b) The body is entitled to protection from smoke
- c) There are advantages to life as a non-smoker.

This approach also includes training in self hypnosis which may be as important as hypnosis by a therapist.¹⁹

Gary R. Elkins and M. Hasan Rajab presented preliminary data regarding hypnosis treatment for smoking cessation in a clinical setting. An individualized, 3-session hypnosis treatment is described. Thirty smokers enrolled in an HMO were referred by their primary physician for treatment. Twenty-one patients returned after an initial consultation and received hypnosis for smoking cessation. At the end of treatment, 81% of those patients reported that they had stopped smoking, and 48% reported abstinence at 12 months post treatment. Most patients (95%) were satisfied with the treatment they received.²⁰

Conclusion

Hypnosis is a mental state that can facilitate a variety of treatment strategies. It has the common misconception that hypnosis means the person being hypnotized loses control. Practiced appropriately, it is a powerful means of helping patients enhance their own control over a variety of symptoms. It is a safe, efficient, and effective tool to reduce symptoms for a multitude of conditions.

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