

Can Clinical Hypnotherapy be used as an Adjunct or an Alternative to Conscious Sedation in Dentistry?

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Abstract

Certain categories of patients are unable to tolerate dental procedures without some form of pharmacological intervention, whether it be via conscious sedation or general anaesthesia. These management techniques although beneficial are time consuming and carry their own risks. A rarely explored alternative is clinical hypnosis, which can be employed with minimal risks and side effects. Clinical hypnosis aims to investigate and manage the underlying aetiology for requiring any form of behavioural or pharmacological management, regardless of the identified cause, rather than moving directly to pharmacologically led management, which often leads to dependency on the chosen technique. The author's aim to explore the correlation between these differing treatment modalities and assess whether hypnosis as a standalone technique can be employed successfully or utilised in a combination technique, 'hypnosedation'.

Aims and Objectives: The aim of this paper is to examine and analyse the use of hypnosis in relation to dental sedation. The object is to explore the following:

1. Causes of dental phobia and anxiety
2. What is conscious sedation and clinical hypnotherapy
3. Indications for their use
4. Hypnotherapy uses in phobia, desensitisation techniques.
5. Hypnotherapy use as an adjunct to reduce sedative drug regimen
6. Reasons for its under utilisation in clinical practice and stigmas attached to it
7. Recommendations

Methods: The three methods employed in this paper are firstly, a literature search using Pubmed; secondly, direct interviews with clinical hypnotherapists and finally, the author's personal case studies working in this field.

Keywords: *Hypnotherapy; Conscious Sedation; Systematic Desensitization; Hypnosedation*

Introduction

The Fifth Edition of the Diagnostic and Statistical Manual of Mental Disorders defines "Specific Phobia" as follows: "The individual experiences excessive and persistent fear of a specific object or situation, experiences feelings of anxiety, fear, or panic immediately upon

encountering the feared object or situation, leading to significant distress or interference in the person’s day-to-day life” [1]. Odontophobia is well recognised and encountered at differing levels by all dental clinicians.

The General Dental Council’s first five years document encourages the awareness ‘of the existence and a range of complimentary therapies’ [2]. Currently, many would define hypnotherapy like acupuncture to be a complimentary therapy, however clinicians trained in these fields may argue otherwise.

The aetiology of dental phobia is multifactorial but commonly arises from a process known as, conditioning, a process of behaviour modification whereby a subject comes to associate a desired behaviour with a previously unrelated stimulus. The conditioning effect of a bad dental experience has been shown to be one of the most important [3]; found that more phobic people than anxious ones attributed their fear to an adverse incident (90.5% vs. 65.8%). In children, conditioning may be only one of a number of factors implicated in the development of dental anxiety, though reports of traumatic experiences were significantly more frequent in anxious than non-anxious children in one study [4]. Which dentist hasn’t experienced a child sitting in the surgery in pain, their parents warning them on the way into the surgery that if they don’t cooperate the ‘nice’ dentist will stick a long needle in their mouth? Truly a recipe for disaster; the parent’s potential misconceptions or past experiences manifesting as potential fears, whether founded or not, are passed like tracing paper straight to their child. The Chief Medical Officer noted the highest admittance to general anaesthesia in UK between 2014 and 2015 was dental caries. Whether this was because of the extent of treatment required or the inability of the child/parents to cope in a general practice setting, is yet to be analysed.

Indicator of sedation/Hypnotherapy need

How does one assess the true need of a patient for either non-pharmacological or pharmacological behavioural management? The indicator of sedation need (IOSN), was developed to aid dentists in their clinical decision making, utilising information about a patient’s anxiety, medical and behavioural status and treatment complexity. It is based on The Modified Dental Anxiety Scale (MDAS), a short questionnaire that may be completed in a few minutes by the patient. It consists of five questions and gives a total summed score between 5 and 25 that is then translated by the dentist to a rank score of 1 - 4 that can be entered into the IOSN [5].

SEDATION NEED domain 1 + 2 + 3 scores		
Total Rank Score	Source Descriptor	Sedation Need
3 - 4	Minimal need	No
5 - 6	Moderate	No
7 - 9	High need	Yes
10 - 12	Very high need	Yes

Table 1: Indicator of Sedation Need (IOSN). Matrix to be Completed by the Dentist

This same scoring system could quite easily be adapted to make an Indicator of Hypnosis Need (IOHN).

What is Conscious Sedation?

The Poswillo report back in 1999, criticized the then existing definitions of sedation on the grounds that they failed to emphasise the essential basic element of hypnotic suggestion and reassurance and emphasised central nervous system depression rather than mood alteration. It made the principle recommendation that simple dental sedation be defined as “a carefully controlled technique in which a single intravenous drug or a combination of oxygen and nitrous oxide, is used to reinforce hypnotic suggestion and reassurance in a way

which allows dental treatment to be performed with minimal physiological and psychological stress [6]. However, even today the current definition of conscious sedation is unchanged and does not take this into account.

Conscious sedation as it stands is defined as ‘a technique in which the use of a drug or drugs produces a state of depression of the central nervous system enabling treatment to be carried out, but during which verbal contact with the patient is maintained throughout the period of sedation. The drug’s and techniques used to provide conscious sedation for dental treatment should carry a margin of safety wide enough to render loss of consciousness unlikely’ [7].

What is Clinical Hypnosis?

Clinical hypnosis can be defined as a technique of deep relaxation, within which the individual becomes highly suggestible. It is quite often described as the medicine of imagination. The term “hypnosis” has been around since the early 1840’s, there are documented records of hypnosis going back 3000 years in Egypt and China. Ibn Sina (Avicenna), a respected 11th century Persian physician and psychologist, was the earliest to make a distinction between hypnosis and sleep. In his book, ‘The Book of Healing’, published in 1027, Avicenna referred to hypnosis in his Arabic text, as the ‘pleasant dreamy imagination’, stating that one could create conditions in another person so that they accept the reality of hypnosis [8].

There are two well defined and recognised types of hypnosis; stage hypnosis and clinical hypnosis. Stage Hypnosis is conducted for the purposes of entertainment and subjects are often pre-selected to be those of higher suggestibility, to ensure the desired outcome of entertainment and those found not to be cooperating are quickly shifted off stage. Clinical hypnosis is conducted with the full co-operation of the patient and such that the hypnotherapist makes suggestions designed to help the patient calculate specific internal processes (memories, feelings, images, etc.) that will lead to mutually agreed upon outcomes.

Hypnotherapy understandably turns eyebrows up, as people imagine a scene where a stage hypnotherapist makes subjects carry out comical acts in front of a rapturous audience. So, when mentioned in the context of the clinical world, it is clear to see why many perceive it with scepticism. Current options in terms of behavioural management include: tell show do, distraction, positive reinforcement, memory restructuring, modelling, systematic desensitisation. Clinical hypnotherapy is not mentioned in the Royal College of Surgeons’ clinical guidelines for non-pharmacological behaviour management, however the author believes it is a crucial frontline behavioural management technique for patients.

How does clinical hypnotherapy work in a dental setting? Dental phobia is very common and even though informal hypnotic (suggestions of relaxation etc.) techniques are used by dentists on a daily basis for patients undergoing routine dental treatment in general dental practice, formal hypnotherapy does not enter most clinicians minds. Specific phobias have been treated using psychodynamic psychotherapy [9], but the treatments of choice have been systematic desensitisation with or without hypnosis [10,11].

‘Augmenting Sedation with Hypnosis in Drug-Dependent Patients’, was a study in which interestingly the authors talk of the term ‘Hypno-sedation’, and their findings concluded that for hypno-sedation to be effective, it is necessary for the patient to be motivated, cooperative, and attentive to the suggestions of the hypnotist. Uncooperative patients with short attention spans are poor candidates for hypnotic techniques [12].

Hypnosis for sedation especially for children has been shown to reduce the amounts of propofol and lignocaine, with accompanying reductions in pain, nausea, fatigue, discomfort and emotional upset [13].

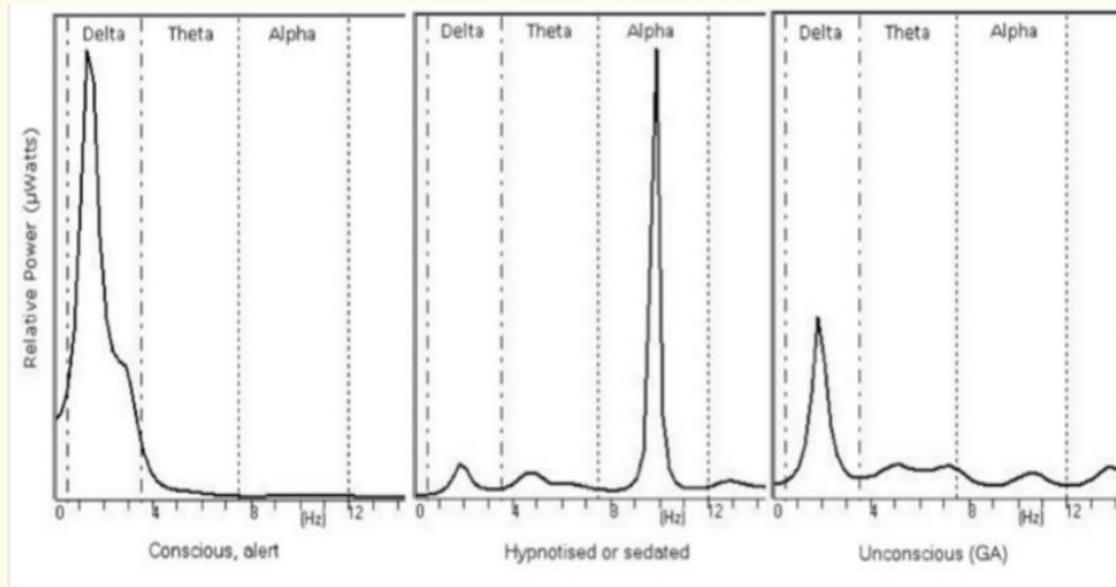


Figure 1: The electroencephalogram (EEG) spectrum. In the conscious, alert state, the EEG power is mainly confined to frequencies below 4Hz (Delta) rhythm. The hypnotic state or sedation with nitrous oxide is characterized by a dominant 10 Hz (Alpha) rhythm. If the subject falls asleep (or becomes unconscious under a general anaesthetic) the alpha is lost and the most notable feature is a low power Delta rhythm.

Indications for Hypnotherapy and Conscious Sedation

Indication	Hypnotherapy	Conscious sedation
Dental anxiety and needle phobia	Yes	Yes
Pronounced gag reflex	Yes	Yes
Complex surgical procedure	Yes	Yes

Differences between Hypnotherapy and Conscious Sedation

	Hypnotherapy	Minimal Sedation	Moderate sedation	Deep Sedation	General Anaesthesia
Level of consciousness	Light/medium/deep trance like state. Responses to verbal commands.	Normal response to verbal commands - anxiolysis	Purposeful response to verbal commands- light touch Conscious sedation	Purposeful response to repeated painful stimuli	Unconscious
Response	Verbal	Verbal	Light touch	Painful stimuli	Nil
Airway	Maintained	Maintained	Maintained	Maintained/ lost	Obstructed
Ventilation	Maintained	Maintained	Maintained	Maintained/ lost	Inadequate
Anaesthesia	Glove analgesia technique can be used to render no requirement for LA	Still required	Still required	Still required	Complete anaesthesia

The main hypnotherapeutic technique utilised is based on a process known as systematic desensitisation, a behavioural technique commonly used to treat, anxiety disorders, fear and phobias. Systematic desensitisation uses the principle of reciprocal inhibition. It is commonly referred to as graduated exposure therapy. A type of Pavlovian therapy developed by South African psychiatrist, Joseph Wolpe [14]. The process of systematic desensitisation occurs in three stages. Stage one involves the identification of an anxiety inducing stimulus hierarchy, Subjective Units of Distress Scale (SUDS). This is a scale from 0 to 100 for measuring the subjective intensity of disturbance or distress currently experienced by an individual. Stage two is the learning of relaxation or coping techniques. Once the individual has been taught these skills, they must use them in stage three to react towards and overcome situations in the established hierarchy of fears. The goal of this process is for the individual to learn how to cope with, and overcome the fear in each step of the hierarchy.

Hypnoanalysis can be used to discover the root cause of the fear allowing the issue to be addressed. Hypnosis is used to train the unconscious mind and re-evaluate thinking patterns and behaviour.

In clinical hypnosis, the patient is guided by the hypnotist to suggestions for changes in subjective experience, alterations in perception, sensation, emotion, thought or behaviour.

In a study conducted in Hungary [15] examining 45 odontological patients, hypnosis proved to be a useful adjunct method to reduce anxiety for 84.4% of the patients.

In a prospective comparative clinical study [16], evaluated the effectiveness of hypnosis in a study with 45 highly anxious and non-anxious patients who had to undertake maxillofacial surgery. They were assessed based on the following objective parameters: EEG, ECG, heart rate, blood pressure, blood oxygen saturation and respiration rate. The results both during and subsequent to the surgery showed that hypnosis helped patients significantly reduce systolic blood pressure and respiration rate, and changes in the EEG were also registered. Moreover, the subjective level of relaxation increased at the same time as the neurophysiologic anxiety reactions (vital parameters) decreased. The authors concluded that hypnosis influenced both the psychological and the physiological reactions of dental anxiety during surgery and the results had long-term effects in future treatments [17].

More recently a study entitled, "Use of Hypnosis as a Substitute Premedication and Adjunct to Anaesthesia" noted that surgery is associated with significant anxiety and stress in a majority of patients. Most medications used to achieve anxiolysis and sedation are limited by their side effects. 'Non-pharmacological hypnosis' is defined as a subjective state, during which alterations of perception and memory can be elicited by suggestions. [18]. The results they found were significantly relevant to those in clinical practice. Hypnosis successfully reduced the anxiety from a range of 45 to 90 (median of 60) to a range of 1 to 20 (median of 10). When calculated and analysed as means, the mean decrease was 56 (95% CI: 51.81, 60.04) with a $p < 0.001$.

Twelve out of fifteen patients had their intravenous access established under hypno-analgesia with no memory of that event. Thirteen patients had successful prevention of nausea and vomiting without antiemetics. Hypnosis also decreased the dose of induction agent in all patients having general anaesthesia.

In a further study, 'Premedication in children: hypnosis versus midazolam'. It noted that the main objectives of premedication in children are to facilitate the separation from the parents, to reduce preoperative anxiety, to smooth the induction of anaesthesia and to lower the risk of postoperative behavioural disorders. Hypnosis enables a state of relaxation to be achieved and has never been evaluated as a premedication technique. The aim of this study was to evaluate the efficacy of hypnosis on anxiety and perioperative behavioural disorders versus midazolam. The authors concluded that hypnosis seemed effective as premedication in children scheduled for surgery. It alleviated preoperative anxiety, especially during induction of anaesthesia and reduced behavioural disorders during the first postoperative week [19].

When behavioural treatments have been compared to general anaesthesia, both produced a reduction in dental anxiety but more of the patients treated behaviourally were able to successfully complete dental treatment (78% vs. 53% of the GA patients [20], which may be a difficulty, as behavioural management seemed to produce more anxiety reduction when compared to intravenous sedation, and further, that more patients maintained high levels of dental anxiety following IV sedation (Dailey, *et al.* 2001).

Interestingly, in a paper entitled 'Hypnosis as adjunct therapy in conscious sedation for plastic surgery', it was found that midazolam requirements were significantly lower in the hypnosis group ($P < .001$) as compared with the intravenous sedation group: respectively, 0.04 ± 0.002 , 0.07 ± 0.005 , and 0.11 ± 0.01 mg/kg/h. Greater patient satisfaction with the anaesthetic procedure and greater surgi-

cal comfort were also reported in the hypnosis group. They went on to conclude, successful hypnosis as an adjunct sedation procedure to conscious IV sedation provided better pain and anxiety relief, than conventional IV sedation and allowed for a significant reduction in midazolam and alfentanil requirements [21].

Hypnotherapy- Conscious Sedation procedure

Stage	Hypnotherapy	Conscious sedation- single drug	General Anaesthesia
Pre op	No stimulants such as coffee, nicotine, mind altering drugs	+/-Oral premed/Emla	+/-Premed/Emla
Induction	Techniques include 1. Simple eye closure 2. Rapid Eye defocusing 3. Tactile Induction 4. Eye fixation/Eye roll 5. Vogts fractionation method	Titrated Midazolam	Induction agents
Deepener	Techniques include 1. limb catalepsy 2. 10-1 countdown 3. Hand rotation 4. Limb heaviness	Increased Titrated Dose to response	Increased drug usage- e.g opiates/propofol
Maintenance	Continued suggestions	Titration- Midazolam	IV/Inhalational
Recovery	Awakening technique	Sedative stopped	Reversal agents
Side Effects	Very rare	Amnesia	Nausea/vomiting

Authors Personal Experience and discussions with specialist clinicians in this field

Sharon Waxkirsh, a specialist dental clinical hypnotherapist conducted self-hypnosis for her own wisdom tooth removal with control of post op blood flow. ‘Ms Waxkirsh says “I hypnotised myself and it is so effective. It didn’t ever become painful, and I didn’t have any blood loss at all” [22].

Ms Waxkirsh kindly gave me her experience and thoughts on this topic. Paediatric patients she describes, often need parents to be involved. She describes a case where a child took three days for the effects of general anaesthesia to wear off. This scarred the father and he decided to seek Sharon’s help, “You have to play the game, put the child in a place where they feel in control”. She used the glove analgesia technique to create numbness in the child and his father by using a special word to trigger this numb feeling. When describing the subconscious mind, Waxkirsh states, “Techniques are one thing but dealing with what emerges is another”.

A highly respected and leading dentist in this field, Dr.Mike Gow describes, “In one case, hypnosis was used instead of local anaesthetics in a sinus lift procedure and implant placement and in another case, I demonstrated hypnosis being used instead of local anaesthetics for the extraction of two upper central incisors and immediate implant placement” [23,24].

The author's personal experience highlights the use of such a technique, successfully being able to treat several patients who had a severe phobia to dentistry, uncontrolled gag reflex (one case study where a patient was told by a leading UK teaching hospital there was nothing that could be done for her due to her pronounced gag reflex). She was managed successfully with a combination technique - hypnotherapy combined with conscious sedation and then hypnotherapy alone.

Recommendations and Conclusion

Clinical Hypnosis has been used successfully in the medical and dental fields to manage effectively anxiety and fear. Patients report lower scores on Dental Anxiety Scales postoperatively while under hypnosis and also report decreased anxiety for follow up appointments. Hypnosis is monetarily inexpensive and has very low risk of side effects. Hypnosis may very well be a safe alternative to conscious sedation and general anaesthesia.

There are well researched and evidence based empirical studies supporting the benefits of hypnosis as an adjunct technique in dentistry. Anecdotal evidence by the authors who currently use this technique is also present. On the basis of available evidence, further research in these areas is justified [25].

Dentists should be encouraged to explore further the use of formal hypnotic techniques. This would not only assist patients to cope better with treatment, but also reduce costly health care bills of hospitalisation.

The authors feel from the above provided evidence that clinical hypnosis is a reasonable alternative and adjunct to conscious sedation and can be utilise, so long as the patient is willing to accept it a conjunctive therapy. In answer to the question thus posed by this paper, Can Clinical Hypnotherapy be used as an Adjunct and or an Alternative to Conscious Sedation in Dentistry? Yes, it can, by correctly trained clinicians and based as with anything on correct case selection. Hypnosis is a powerful tool at disposable to the dental surgeon, but rarely explored. However, this does not rule out the need for conscious sedation and general anaesthesia in selected cases.

Sadly, there is a lack of training in this field. "There is a lack of appropriately trained dentists offering hypnosis, and this will affect both the patient's awareness and access to clinical hypnosis [26]". Courses are available but the minefield of organisations training in hypnotherapy becomes a little overwhelming. Those who are trained in this field and who are dentists also, find it difficult to utilise hypnotherapy on national health patients as there is no funding for it, so it becomes a management option only for those who can finance it. A serious question to pose would be 'Should it be taught at sedation courses?' [27].

Based on this review, there is an obvious need for further investigation and research, but it may be time those dictating dental policy and dental professionals alike, started looking outside the conventional realms and maybe so called 'alternative' techniques may not be as alternative as need be, but be considered by those in dental undergraduate training to become a main stay of dental behavioral management.

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