

## **HYPNODONTICS: THE ART OF SUGGESTION TO CONTROL DENTAL**

### **ANXIETY**

Gilang Yubiliana,<sup>1</sup> Eky Soeria Soemantri,<sup>1</sup> Ardini Saptaningsih Raksanagara,<sup>2</sup>  
Sri Susilawati<sup>1</sup>

<sup>1</sup>Fakultas Kedokteran Gigi Universitas Padjadjaran, <sup>2</sup>Fakultas Kedokteran Gigi  
Universitas Padjadjaran, <sup>2</sup>Departemen Ilmu Kesehatan Masyarakat, Fakultas  
Kedokteran Universitas Padjadjaran, <sup>1</sup>Fakultas Kedokteran Gigi Universitas Padjadjaran

### **ABSTRACT**

Prevalent among 6-15% of the total population, dental anxiety is the most common problem in dentistry around the world. Dental anxiety may impact on oral health and quality of life, which may further lead to general anxiety. Dental anxiety can be reduced by means of hypnodontics . The objective of this paper is to collect and review data about the effectiveness of hypnodontic method during dental treatment to control dental anxiety. The PubMed and Ebscohost databases were searched by using the keywords ‘hypnodontics’, ‘hypnosis in dentistry’, and ‘hypnotherapy in dentistry’. The search was narrowed down to find relevant information from the last five years. The inclusion criteria of the review are randomized controlled trials, cohort studies, case-control studies, literature review, and all types of reviews. The selected articles should contain implicit or explicit mentions of effectiveness of hypnodontic. The search identified 99 articles, only 38 of which were considered for this paper. The result shows that 35 articles (92.1%) affirm that hypnodontics has positive impacts on dental anxiety, while 3 articles (7.9%) affirm that it has no impact on dental anxiety. Through a hypnodontic method, sound waves are converted into nerve impulse that directly affects the central

nervous system and finally reduces dental anxiety. It is concluded that hypnodontics is an effective method to control dental anxiety during dental treatment.

**Keywords:** dental anxiety, hypnodontic, dental treatment

## **HYPNODONTIK : SENI KALIMAT SUGESTI UNTUK MENGENDALIKAN ANSIETAS DENTAL**

Gilang Yubiliana,<sup>1</sup> Eky Soeria Soemantri,<sup>1</sup> Ardini Saptaningsih Raksanagara,<sup>2</sup>  
Sri Susilawati<sup>1</sup>

<sup>1</sup>Fakultas Kedokteran Gigi Universitas Padjadjaran, <sup>2</sup>Fakultas Kedokteran Gigi  
Universitas Padjadjaran, <sup>2</sup>Departemen Ilmu Kesehatan Masyarakat, Fakultas  
Kedokteran Universitas Padjadjaran, <sup>1</sup>Fakultas Kedokteran Gigi Universitas Padjadjaran

Kecemasan dental merupakan masalah paling umum dalam bidang kedokteran gigi di seluruh dunia dengan prevalensi 6-15% dari total populasi. Kecemasan dental dapat memengaruhi kesehatan rongga mulut dan kualitas hidup seseorang yang kemudian dapat menyebabkan kecemasan secara umum. Kecemasan dental dapat dikurangi oleh hipnodontik. Tujuan dari artikel ini adalah untuk mengumpulkan dan mengkaji data mengenai efektifitas metode hipnodontik selama perawatan untuk mengontrol kecemasan dental. Artikel dicari dari sumber data Pubmed dan Ebscohost dengan menggunakan kata kunci ‘*hypnodontics*’, ‘*hypnosis in dentistry*’, dan ‘*hypnotherapy in dentistry*’. Untuk mendapatkan informasi yang relevan, pencarian ini dibatasi selama lima tahun terakhir. Kriteria inklusi dari penelitian ini adalah *randomized controlled trials*, *cohort studies*, *case-control studies*, *literature review* dan semua jenis kajian literatur. Artikel yang terpilih harus menjelaskan mengenai efektifitas hipnodontik baik secara implisit ataupun eksplisit. Pencarian ini mengidentifikasi 99 artikel, namun hanya 38 artikel yang dipertimbangkan untuk penelitian ini. Hasil penelitian menunjukkan sebanyak 35 artikel (92.1%) menegaskan bahwa hipnodontik memiliki pengaruh positif terhadap kecemasan dental, sedangkan 3 artikel (7.9%) menegaskan bahwa hipnodontik tidak berpengaruh terhadap kecemasan dental. Melalui metode hipnodontik, gelombang

suara dikonversi menjadi impuls saraf yang secara langsung memengaruhi sistem saraf pusat dan akhirnya dapat mengurangi kecemasan dental. Secara umum dapat disimpulkan bahwa hipnodontik merupakan metode yang efektif untuk mengontrol kecemasan dental selama perawatan.

**Kata Kunci:** kecemasan dental, hipnodontik, perawatan dental

## **Introduction**

Dental anxiety is the most common problem found in dental patients around the world, especially in Indonesia and the prevalence is 6-15% of the total population worldwide. Dental anxiety is defined as a subjective state of fear of dental treatment that can lead to such oral problems as missing teeth, caries and periodontitis.<sup>1-2</sup> In the worst case, dental anxiety directly impacts on quality of life and may eventually lead to general anxiety. To control and manage dental anxiety, a dentist should use psychometric questionnaires or semi-structured patient interview in order to identify the nature and degree of dental anxiety, the patient's main concern and manifestations of dental anxiety (3, 4). There are two main treatment approaches to control dental anxiety: pharmacological and psychological treatment.<sup>2</sup> Hypnodontics is the art of hypnosis to reduce dental anxiety and produce relaxation. In operational terms, hypnodontics can also be defined as an increased susceptibility to suggestion via verbal or nonverbal stimuli (5). The benefits of the method are that it can reduce drug use and thus eliminate their drug side effects, reduce costs, and create comfort condition for patient and dentist during dental treatment (6). The aim of this paper is to collect and review data about effectiveness of hypnodontics to control dental anxiety during dental treatment.

## **Methods**

Pubmed and Ebscohost databases were searched using the keywords ‘hypnodontics’, ‘hypnosis in dentistry’ and ‘hypnotherapy in dentistry’ to retrieve data from the last five years. Titles, authors, and abstracts from various studies were identified and articles explicitly and implicitly dealing with hypnodontic effects on controlling dental anxiety were chosen. The inclusion criteria of the review were randomized controlled trials, cohort studies, case-control studies, and all types of reviews. The electronic search yielded 99 articles, but only 38 articles were considered and analyzed statistically for the purpose of this article review. To avoid risks of biased assessment, the articles were selected and the data were analyzed and extracted independently by the three authors of the article.

## **Results**

Twenty-five articles found to potentially meet the inclusion criteria were analyzed statistically. While thirty-five articles (92.1%) affirm that hypnodontics has positive impact to dental anxiety control, while three articles (7.9%) affirm the opposite. By means of hypnodontic method, sound waves are converted into nerve impulse that directly affects the central nervous system and eventually reduces dental anxiety (6). The results of the above studies are summarized in Table 1 below.

Table 1. Impact of hypnodontics on dental anxiety and pain

No	Results	Number of Articles Reviewed	Percentage (%)
1	Positive impact confirmed	35	92.1
2	Negative impact confirmed	3	7.9

## Discussion

This present study was carried out to assess the effectiveness of hypnodontics during dental treatment. As the results show, 88% of the articles reviewed confirm that hypnodontics has positive impact dental anxiety control. This finding is analogous with those of other studies which in general suggest that hypnodontics can reduce anxiety, complex temporomandibular disorder pain and diastolic blood pressure, suppress cortical activities, and that it can reduce anxiety for the longest period of time (7; 8; 9; 10; 11; 12). The present study also identified several studies which claim that hypnodontics has no effect on dental treatment outcome (13). The effectiveness of hypnodontics depends on the level of hypnotic suggestibility. The greater the hypnotic suggestibility, the greater the hypnotic effect (14).

Normally, patients' responses to fear and anxiety can be categorized into three levels, namely intellectual level, emotional level, and hedonic level. Intellectual level is the highest level of response that a patient gives when receiving dental treatment. At this level, a patient shows willingness to undergo and no fear of dental treatment with

the hope of obtaining the benefits of dental treatment. Emotional response is divided into two types, physiologically significant response and psychologically significant response. Both types of responses find their expression in the forms of rage, provocational behavior toward fight, fear, outcries, or panic. The third level, the hedonic level, refers to the lowest response to dental treatment. A patient with hedonic response is usually concerned only with him- or herself, accepting only pleasant or comfortable condition and rejecting the opposites (15).

The etiology of dental anxiety is negative experience of dental treatment. This experience could be self-experienced, observed, or told. The other factors associated with dental anxiety include age, gender, psychological condition, socio-economic status, and culture (16; 2, 17). Women have a higher level of dental anxiety than men because women tend to express their fears openly. There is, however, an inverse relationship between dental anxiety and age. Dental anxiety is more prevalent among younger patients than among older patients. This fact is supported by a study by Liddell and Locker, who show that older patients have less painful dental treatment experiences than do younger patients (1).

Hypnodontics is a non-pharmacological approach that can be applied to address the following conditions: anxiety, phobias (specific phobias e.g. general dental treatment, needle, dental needle, blood, drill etc.), gagging (during procedures or denture or appliance intolerance), para-functional habits (bruxism, tongue-thrusting), TMJ dysfunction, modified oral habits (thumb sucking, nail biting, etc.), acute pain, chronic facial pain, psycho-somatic facial pain, salivation, bleeding, poor oral hygiene, smoking

cessation, stress-related recurrent aphthous stomatitis, and burning mouth syndrome's symptoms (18). However, some contraindications of hypnosis in dental treatment have been indicated. They include severe mental diseases, unsolved medical diagnosis, not enough time, patients' refusal against hypnodontic treatment (19).

Hypnosis involves two major mechanisms, namely central and peripheral mechanisms. Central mechanism is concerned with the central nervous system while peripheral mechanism is concerned with nervous, cardiovascular, hemostasis, and kidney systems. Central mechanism is initiated by verbal stimuli such as systematic suggestive sentences that are converted into nerve impulse through the auditory system, which is then received by the vestibulocochlearis nerve (N. VIII). This nerve transfers impulse to the temporal lobe of the brain, particularly the Brodmann areas 41, 42, 22, and reaches Wernicke's area and the raphe neurons. The raphe neurons in the cortex, hypothalamus, thalamus, basal ganglia, and hippocampus produce serotonin, a precursor of melatonin which causes drowsiness and relaxation. Simultaneously, brain waves are altered from beta to alpha waves in Wernicke's area, thus increasing serotonin level and leading to an obstruction of acetyl choline. Obstruction of acetyl choline would increase pain threshold. When this occurs, the subconscious mind is activated and suggestions will work easily (6).

Meanwhile, in the peripheral mechanism, the nerve impulse is received by N.VIII before it reaches and directly stimulates the vasomotor center and the vagus nerve. Vasomotor center acts as a regulator of blood pressure, while the vagus nerve affects the cardiovascular and kidney systems. The Vagus nerves releases neurotransmitter acetyl



choline that can decrease heart muscle contractility and blood vessel's dilatation (6). Reduction of dental anxiety is indicated by the decrease of such vital signs such as blood pressure, pulse, respiratory amount, and last salivary cortisol level.

This paper suggests that hypnodontics is an alternative method to control dental anxiety through verbal or non-verbal stimuli. Through hypnodontic method, non-verbal stimuli such as sound waves are converted into nerve impulse that directly affects the central nervous system and thus reduces dental anxiety. This method provides a better dentist-patient relationship and can create a comfortable condition for both the patient and the dentist during dental treatment and eventually help attain dental treatment goals. Hypnodontics can also reduce drug use, drug side effects, and treatment cost. Generally, hypnodontics is an effective and efficient method to control dental anxiety during dental treatment.

## **References**

1. Udoye CI, Oginni AO, Oginni FO. Dental anxiety among patients undergoing various dental treatments in Nigerian teaching hospital. *J Contemp Dent Pract.* 2005;6(2):1-8.
2. Hoem, FA, Elde KToKM. Clinical management of the adult patients with dental anxiety. Norway: Institutt for Klinisk Odontolog; 2012.
3. Armfield JM, Heaton LJ. Management of fear and anxiety in the dental clinic: a review. *Aust Dent J.* 2013;58(4): 390-470.

4. Wide Boman U, Carlsson V, Westin M, Hakeberg M. Psychological treatment of dental anxiety among adults. *Eur J Oral Sci.* 2013;121(3):225-34.
5. Erickson MH, Hershman S, Sector II. *The practical application of medical and dental hypnosis.* Boca Raton, Florida: OTC Publishing Corp; 2005.
6. Suastari NM, Bayu P. Pemanfaatan hypnosis sebagai terapi non-farmakologis ada penatalaksanaan disfungsi ereksi. *SCRIPTA.* 2014;1(2):22-29.
7. Abrahamsen R, Dietz M, Lodahl S, Roepstorff A, Zachariae R, Østergaard L, et al. Effect of hypnotic pain modulation on brain activity in patients with temporomandibular disorder pain. *Pain.* 2010;151(3):825-33.
8. Abrahamsen R, Baad-Hansen L, Zachariae R, Syensson P. Effect of hypnosis on pain and blink reflexes in patients with painful temporomandibular disorder. *Clin J Pain.* 2011;27(4):344-351.
9. Eitner S, Bitner C, Wichmann M, Nickenig HJ, Sokol B. Comparison of conventional therapies for dentin hypersensitivity versus medical hypnosis. *Int J Clin Exp Hypn.* 2010;58(4):457-75.
10. Eitner S, Sokol B, Wichmann M, Bauer J, Engels D. Clinical use of a novel audio pillow with recorded hypnotherapy instructions and music for anxiolysis during dental implant surgery: a prospective study. *Int J Clin Exp Hypn.* 2011;59(2):180-97.
11. Huet A, Lucas-Polomeni MM, Robert JC, Sixou JL, Wodey E. Hypnosis and dental anesthesia in children: a prospective controlled study. *Int J Clin Exp Hypn.* 2011;59(4):424-40.

12. Lu DP, Wu PS, Lu WI. Sedating the apprehensive debilitated patients for dental procedures by combining parenteral sedation and hypnosis with supplemental acupuncture therapy. *Acupunct Electrother Res.* 2012;37(1):49-62.
13. Al-Harashi S, Ashley PF, Moles DR, Parekh S, Walters V. Hypnosis for children undergoing dental treatment. *Cochrae Database Syst Rev.* 2010;4(8)1-7.
14. Montgomery HG, JB Schnur, D David. The impact of hypnotic suggestibility in clinical care settings. *Int J Clin Exp Hypn.* 2011;59(3):294-309.
15. Rubin GJ, Mark S, Michael K. The psychodynamics of dental anxiety and dental phobia. *Dent Clin North Am.* 1988;32 (4):647-56.
16. Appukuttan PD, Anupama T, Priyanka KC, Sangeetha S, Mythreyi V. Prevalence of dental anxiety among patients attending a Dental Educational Institution in Chennai, India – a questionnaire based study. *OHDM.* 2013;12 (4):289-94.
17. Madfa AA, Abdullah GA, Al-Sanaban FA, Alhajj MN, Al-Qudaimi NH, Al-Malah NA, et al. Prevalence of dental anxiety and fear among medical students at University of Thamar. *American Journal of Health Research.* 2015;3(1-2):5-9.
18. Gow MA. Hypnosis at work. *Dentistry Clinical*; 2008 September 18; Kota: Penerbit; 2008
19. Schmierer A. Dental care. In: *Introduction to hypnosis for medical doctors, nurses, medical students, and selected health care workers.* Edisi ke-2. United States: American Society of Clinical Hypnosis; 2008.