

Hypnosis and its applications in Dentistry

A hipnose e suas aplicações na Odontologia

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Received: 05/15/2024 | Revised: 06/10/2024 | Accepted: 06/24/2024 | Published: 06/27/2024

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Abstract

Objective: Research through a literature review the use of hypnosis as an anxiety control technique in dentistry. **Methodology:** Searches were conducted using descriptors in PubMed Central, BVS/BIREME, Web of Science, SciELO, The Cochrane Library, and Google Scholar. In addition, considering that this article is a literature review, the view of Mattos (2015) was used to structure this work. **Results:** Our research resulted in 20 articles. The Federal Council of Dentistry (CFO) Decision 45/2008 was used as a reference for complementary standards for qualification in integrative and complementary oral health practices. **Conclusion:** Despite the mysticism that surrounds it, hypnosis is, in fact, a scientifically proven tool that helps to reduce costs, as it can be an alternative to anesthetics and medications with analgesic effects. This makes it possible to treat patients' adversities and promote comfort. Scientific studies in this area have great potential in dental clinics and other oral hygiene environments.

Keywords: Anxiety; Hypnosis; Hypnosis anesthetic.

Resumo

Objetivo: Pesquisar por meio de revisão bibliográfica o uso da hipnose como técnica de controle da ansiedade na odontologia. **Metodologia:** Foram realizadas buscas utilizando descritores no PubMed Central, BVS/BIREME, Web of Science, SciELO, The Cochrane Library e Google Acadêmico. Além disso, tendo em vista que este artigo trata de uma revisão de literatura, a visão de Mattos (2015) foi utilizada para estruturar esse trabalho. **Resultados:** Nossa pesquisa resultou em 20 artigos. A Decisão 45/2008 do Conselho Federal de Odontologia (CFO) foi utilizada como referência para normas complementares para qualificação em práticas integrativas e complementares de saúde bucal. **Conclusão:** Apesar do misticismo que a envolve, a hipnose é, de fato, uma ferramenta cientificamente comprovada que auxilia na redução de custos, pois pode ser uma alternativa aos anestésicos e medicamentos com efeitos analgésicos. Isso

possibilita tratar as adversidades dos pacientes e promover conforto. Estudos científicos nessa área têm grande potencial em clínicas odontológicas e outros ambientes de higiene bucal.

Palavras-chave: Ansiedade; Hipnose; Hipnose anestésica.

Resumen

Objetivo: Investigar a través de una revisión de la literatura el uso de la hipnosis como técnica de control de la ansiedad en odontología. **Metodología:** Se realizaron búsquedas utilizando descriptores en PubMed Central, BVS/BIREME, Web of Science, SciELO, The Cochrane Library y Google Scholar. Además, teniendo en cuenta que este artículo es una revisión bibliográfica, se utilizó la visión de Mattos (2015) para estructurar este trabajo. **Resultados:** Nuestra investigación resultó en 20 artículos. La Decisión 45/2008 del Consejo Federal de Odontología (CFO) se utilizó como referencia para las normas complementarias de calificación en prácticas de salud bucal integrativas y complementarias. **Conclusión:** A pesar del misticismo que la rodea, la hipnosis es, de hecho, una herramienta científicamente comprobada que ayuda a reducir costos, ya que puede ser una alternativa a los anestésicos y medicamentos con efectos analgésicos. Esto hace posible tratar las adversidades de los pacientes y promover el confort. Los estudios científicos en esta área tienen un gran potencial en las clínicas dentales y otros entornos de higiene bucal.

Palabras clave: Ansiedad; Hipnosis; Hipnosis anestésica.

1. Introduction

Mankind throughout its history has always searched for ways to contain anxiety, especially when caused by the expectation of pain during any health treatment. This is natural and expected and is not a new phenomenon. Many different approaches have been applied to restrain, contain, or even eliminate anxiety, enhancing calmness in the patient, which can be used in the vast medical and health fields in general. In this sense, hypnosis has emerged as an intriguing possibility for dental professionals to offer better and more comfortable treatment for their patients.

The use of this approach has been documented since immemorial times. Even before Christ, there have been reports of hypnosis to support pain during empirical treatments used at those times. Over the centuries, it became stereotyped by the use of swinging pendulum clocks or repeated words theoretically inducing a kind of trance in patients, generating an environment of calmness and a consequent response to verbal commands. Obviously, such clichés do not correspond to the clinical reality used professionally in modern times (Nash & Benham, 2005 and Maia, 2007).

Despite the inevitable comparison with mysticism and even occultism, hypnosis is a scientifically-based procedure concerning mental mechanisms for releasing neurotransmitters to suppress pain. It is considered an altered state of consciousness, on the border between sleepiness and wakefulness. In such a state, the right hemisphere of the brain, responsible for imagination, is somewhat activated, while the left hemisphere, considered the most rational, relaxes, allowing the unconscious mind to manifest itself in many different ways (Seixas, 2008).

In summary, hypnosis may be an interesting tool to enhance the therapeutic response in virtually all dental specialties in clinical environments. To achieve this, it is the dentist who leads the patient to an altered state of consciousness using the body's own natural resources through the mind, facilitating commands that can potentially establish responses useful for regaining health. The dental practitioner who applies this form of treatment may be called a hypnologist, hypnodentist, or even hypnopractitioner (CFO, 2008).

2. Methodology

To accomplish this research, interviews with hypnodentists were conducted to acquire practical insights and tips that only active professionals can provide. Additionally, online searches were performed. For data collection, we used the following descriptors: Anxiety; Hypnosis; Anesthetic Hypnosis. The search resulted in articles found through databases available from BVS/BIREME and PubMed Central. Other platforms such as Web of Science, Science Direct, the Periodical Portal from CAPES, as well as The Cochrane Library and PROSPERO, were also used. Google Scholar was the final platform chosen for gathering

the articles necessary for the construction of this paper. As the basis for the methods used in this paper, the Federal Council of Dentistry (CFO) Decision 45/2008 was used as a reference for complementary standards for qualification in integrative and complementary oral health practices, which underpinned the strategies applied in this study. As a methodological basis, this literature review article was based on readings from the study by Mattos (2015), which deals with the characteristics of a literature review, as well as its approach, structure and its differences when compared to other review articles, in addition to other online searches.

3. Results

The concept of hypnosis can be designated as a transient altered state of mental consciousness, which may be triggered through specific therapies or may even occur naturally in many people, in a wide range of depths, several times a day. Most people activate mini-trance mechanisms every two hours, generating moments of distraction, with a loss of focus and consequently concentration.

What the hypnologist does varies according to the individual's personal sensitivity and susceptibility to achieve deeper levels of hypnosis, disassociating attention and concentration focused on specific points (Galvão, 2008). Once the person has been hypnotized, they begin to perceive and become less aware of the external environment full of concomitant and integrated sensory stimuli, focusing essentially on the sensations that emerge from their own bodies. This process modifies their neurosensory functions and consequently expands memory, understanding, and feelings, favoring dialogue between body and mind, at the borderline between consciousness and unconsciousness. This contributes to self-regulation through the contemplation of inner knowledge that influences the behavioral personality of the patients (Zanotto, 2008).

3.1 Hypnosis and its objectives

Hypnosis is characterized, according to the definition by the American Psychological Association, as a mental state or a type of behavior that involves focused attention and reduced awareness, leading to a greater capacity to respond to suggestions. Furthermore, it is also understood as a set of specific and natural phenomena of the mind, producing various impacts. Its use must be conducted by specialized professionals, as untrained practice can cause significant harm to the individual.

3.1.1 Objectives

The clinical usefulness of hypnosis depends, as mentioned previously, on the patient's suggestibility and their potential for internalization. Therefore, there is no rigidly applied, standardized method for every patient. However, its applicability depends primarily on the goals the professional wants to achieve. Through this scope, the main objectives of its applicability are presented below:

- Change consciousness, enabling access to the subconscious, where emotions, feelings, habits, traumas, and long-term memories are found, which most people cannot control on a conscious level;
- Suggest a new mental pattern, creating mental reprogrammings with the purpose of leading the person to find the cause of their problems, analyzing them from other points of view, and finding more appropriate therapeutic solutions;
- Develop the patient's discernment and insight, in addition to helping them understand and analyze the problem in a simple and objective way;
- Contribute to the treatment of anxiety, stress, depression, grief, sleep problems, fears, and phobias, among others;
- Explore suggestibility to direct it to dental treatment (Persia, 2021).

3.2 Origin of hypnosis

To construct this work, it is necessary to understand the researchers who contributed to its current state of the art. To this end, here is the list:

- Franz Mesmer (1734-1815): In his studies during the late 18th century, Mesmer linked the emergence of diseases with the misalignment of individuals' magnetic fields. This led to the emergence of the Mesmerism technique, which aimed to treat illnesses using magnets, fixing the gaze, and moving the hands (Alvarado, 2002; Gauld, 1992 and Whorton, 2002).
- James Braid (1795-1860): A great admirer of Mesmer, Braid discovered the possibility of inducing people into a hypnotic trance by fixing their gaze. For a period, hypnosis was forgotten due to its bad reputation, as at that time, the nature and dynamics of these phenomena were not well understood (Alakija, 1992).
- James Esdaile (1808-1859): A pioneer in the use of hypnosis in surgery, Esdaile achieved deep levels of anesthesia without pain. He studied the works of Mesmer and delved deeper into the possibility of healing through mesmerism, discovering that individuals under hypnosis did not feel pain. Using the Esdaile technique, it became possible to apply hypnosis in surgical procedures such as tooth extractions and gingivoplasties, benefiting various endodontic specialties and potentially replacing the use of anesthetics. However, some professionals who utilize this technique, even with patients in an Esdaile state, choose to supplement it with local chemical anesthetics (Esdaile, 1989).

3.3 Requirements for practicing hypnosis

- Suggestibility: The ability to comply with and collaborate with instructions given by the hypnologist. It is essential that the patient wants to be hypnotized and believes that this is possible;
- Dissociation: The ability to decrease sensory perception of peripheral situations, always aiming to focus only on hypnotic stimuli;
- Absorption: A possible consequence of the two aforementioned abilities, resulting in the capacity to become deeply involved in perceptual, imaginative, or ideational experiences (Vanhaudenhuyse et al., 2014).

3.4 Functionality of hypnosis

- Provide comfort and relaxation to the patient through a welcoming environment and comforting speech by the professional;
- Induce the patient into a stage of consciousness close to REM sleep (deep sleep), while still remaining conscious and awake. This is achieved through suggestions and instructions;
- Stimulate the patient using hypnotic techniques, aimed at their recovery or alleviation of undesirable symptoms.

3.5 Neurophysiology of hypnosis

The brain is the primary organ of the nervous system located inside the skull, while the mind is the state of consciousness or subconsciousness that allows the expression of human nature. We have two types of minds:

- Conscious mind: It is responsible for four tasks: analyzing and making decisions, rationalization, managing impulses, and storing short-term memories or functional memory, which stores day-to-day information temporarily.
- Subconscious mind: Responsible for long-term memories, emotions, habits, instincts, and self-preservation.

Between the conscious and subconscious mind, there is a barrier called the critical factor, which judges and selects the information that will be stored in the subconscious. It is possible to cross this barrier and access this area through hypnosis.

During the initial hypnotic stimuli aimed at relaxation, the Frontal Lobe (the region of the brain responsible for controlling emotions, decision-making, judgment, etc.) experiences a decrease in activity in its regions responsible for peripheral attention, while other areas responsible for focus and attention are activated. These two determinants facilitate the individual's relaxation and concentration, which leads to susceptibility to the hypnotic method. Thus, it is interesting to note that individuals with a greater number of neural networks ("exchanges" of information between sectors of the brain) in this region are easier to maintain focus and attention, and therefore have a higher aptitude for hypnotic dissociation, making them more susceptible to being hypnotized. With the patient in this altered state of consciousness, their subconscious - previously inaccessible - is now accessible, making it ready to receive stimuli and suggestions aimed at treating issues such as phobias, providing analgesia, and reducing stress (Vanhaudenhuyse et al., 2014).

3.6 Application of hypnosis in dentistry

The use of hypnosis in dentistry emerges as a valuable tool in the therapeutic landscape, particularly for patients with phobias or traumas resulting from previous poorly conducted treatments, or inherent occurrences in dental procedures such as pain and bleeding. While these situations are often unavoidable, within appropriate proportions, in most dental procedures.

In practice, hypnosis employs methods and techniques aimed at enhancing therapeutic efficiency in treatment. Essentially, the patient is guided by the dentist, allowing them to leverage their subconscious to their advantage. This approach seeks to build trust with the patient, thereby reducing anxiety and stress to facilitate the dentist's work and manage the patient's physiological responses, including bleeding and salivation. The benefit for the dentist is a reduction in service time, while for the patient, it entails relief from pain and anxiety, as well as the experience of comfort and quality care (Hoffmann et al., 2022).

The practice of hypnosis is regulated by Article 6 of Law N°. 5,081, dated 08/24/66, of the Federal Council of Dentistry/CFO. Regarding clinical applicability, the list of procedures includes:

3.6.1 Analgesia

Although the practice of anesthesia is a routine part of everyday dentistry, it remains a source of anxiety for many patients. Hypnotic analgesia offers a complementary approach for dental professionals, particularly in the "pre-treatment" phase, where the dentist induces the patient into a state of somnambulism through focused concentration and relaxation commands. The goal is to alleviate pain without the use of anesthesia or analgesics.

Endodontics, the branch responsible for treating the internal structures of teeth, frequently involves procedures such as root canal treatments that can cause painful stimuli, necessitating the use of anesthesia for patient comfort. Hypnosis can serve as a tool to facilitate these procedures, potentially eliminating the need for anesthesia or analgesics and reducing psychological pain.

Hypnotic analgesia works as follows: the hypnodentist uses a soft tone of voice to guide the patient's focus on an object or a story, inducing a state of relaxation. This allows the professional to influence the patient's subconscious so that they no longer perceive pain. This practice is also applicable in other specialties and for various types of treatments, including bruxism and temporomandibular disorder (TMD) treatments (Maehle & Wolfram, 2017).

3.6.2 Bruxism

Bruxism is a phenomenon caused by several factors related to the central and autonomic nervous systems, with stress considered the most relevant etiological factor. Incorrect activity of the masticatory muscles and irregular jaw positions during sleep can exacerbate this condition.

Hypnosis is also beneficial in the treatment of bruxism. When the patient is in a hypnotic state, they are more receptive to suggestions, making it easier to induce behaviors that prevent grinding or clenching of teeth. This approach helps modify maladaptive behavioral patterns until the underlying issues are addressed. Additionally, self-hypnosis can be employed, where the patient induces a hypnotic state themselves, typically before sleep or when feeling anxious (Granone, 1989).

3.6.3 Dentophobia

Odontophobia is characterized by a state of reduced physical and mental comfort. Many patients fear going to the dentist, often due to their own traumatic experiences or stories they have heard about dental treatments. Hypnotherapy offers a means to address these fears and traumas, including the fear of the sound of the dental drill and, most significantly, the fear of pain.

Through hypnotherapy, it is possible to guide the patient to recall the first time they experienced this fear, which has subsequently led them to avoid or neglect dental treatment (Belle et al., 2023). Once this initial memory is identified, the hypnotherapist's role is to reinterpret this memory and provide suggestions to the patient's subconscious that the dentist is there to promote their health and well-being, not to cause harm.

During treatment, these initial fear memories and subsequent related experiences are reframed, encouraging the patient to view dental treatment positively and recognize its importance for their overall health (Erickson & Hershman, 2003).

3.6.4 Temporomandibular dysfunction

Many therapeutic techniques commonly used to alleviate pain symptoms in patients with chronic temporomandibular disorders (TMD) often fall short. Nevertheless, dentistry can benefit significantly from the inclusion of hypnosis in clinical contexts. This technique can serve as a complementary approach alongside other therapeutic options for treating various conditions associated with TMD, potentially improving patients' symptoms, function, and overall quality of life (Gomes et al., 2022).

Hypnosis is a powerful therapeutic tool that represents a valuable complement capable of enhancing the effectiveness of standard TMD treatments. However, there is a pressing need for more randomized clinical studies with significant sample sizes to evaluate the long-term effectiveness of hypnosis for TMD treatment (Heap, 2005).

4. Discussion

The use of hypnosis in dentistry is still unknown to most dental surgeons. The lack of applicability in integrated clinics makes its techniques and tactics practically invisible to the majority of students, who consider hypnosis to have a placebo effect or be merely autosuggestion.

Some hypnologists categorically state that certain effects of hypnosis refer to past traumas, not necessarily of dental origin. For example, being stuck in an elevator for a long time can develop claustrophobia related to traditional dental offices, within which the patient may feel suffocated or terrified. However, as memories become conscious, the phobia tends to be lessened or even resolved. Other hypnologists go further and report cases of patients whose trauma originates from past lives, in specific years mentioned by them. Others, skeptical about such claims, attribute what happened to the patient's own imagination. As there is no appropriate way to measure these reports, they remain speculative within the group of possibilities. However,

regardless of interpretations, most patients improve.

A notable fact when evaluating articles about hypnosis is the statement by most authors that “not all patients can be hypnotized.” Suggestion seems to be the key that undoubtedly determines the degree of susceptibility within which an individual can accept what is suggested (Rauch & Panek, 2008). This assessment is based on chronological and mental age; personality is also shaped by emotional stability and, equally importantly, by the social environment.

Some studies go further and categorically state that no less than 80% of the world's population is potentially hypnotizable, particularly individuals with a higher level of intelligence due to their ability to concentrate. Another group with a greater tendency and relative ease towards hypnotism are exhibitionists, as they are easy to induce (Wobst, 2007 and Rauch & Panek, 2008). In one way or another, the experience and analytical power of the hypnologist are fundamental to the success of this auxiliary therapy, which, combined with the patient's susceptibility, can produce a patient with deeper levels of cooperation, allowing dental treatment to be completed in a more comfortable, faster, and efficient manner.

5. Final Considerations

Hypnosis is a technique that is often underestimated due to the mysticism that surrounds it. However, it is far from being discarded, as it has been used since the beginning of the 16th century, showing evidence in scientific productions propagated in academia. The therapy also offers reduced costs because it serves as an alternative to reducing the use of doses of anesthetics and analgesics, in addition to reducing anxiety in the patient and promoting comfort for both the patient and the professional. Scientific study in this area has great potential in dental clinics and other oral care settings. Nevertheless, it is fundamental that more specific studies be carried out regarding dental specialties, using randomized clinical trials in order to achieve more significant and assertive results.

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