


Assessment of Hypnosis Knowledge Among Dentists: A Cross-Sectional Study

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ABSTRACT

Objective: To assess the attitudes, experiences, training levels, and interest in future education regarding the use of hypnosis by dentists working in Dental Clinic of Monastir, Tunisia. **Material and Methods:** A cross-sectional study was conducted among 330 dentists working in Dental Clinic of Monastir in November 2019. Students, internship, residents, and professors were randomly selected. This was a survey with a structured questionnaire mailed to all dentists. The questionnaire was pre-fabricated, simple, and close-ended. Data were analyzed using SPSS 24.0 statistical software. **Results:** A total of 202 dentists respond to this survey. 54% of the participants were interns with a female predominance (66.5%). Findings revealed that beliefs toward hypnosis in the sample were generally positive. Using a visual analogue scale, dentists reported having moderate acknowledge in hypnosis (3.4). 60% of the participants in our study consider that hypnosis is useful in dentistry and, more particularly, in pediatric dentistry. 78.2% of respondents want to follow training courses in hypnosis. **Conclusion:** Our survey highlights the weak knowledge of participants in hypnosis and reveals certain misconceptions about this procedure. More efforts are required to better educate dentists about hypnosis's benefits in their practice.

Keywords: Hypnosis; Dentistry; Analgesia; Pain; Surveys and Questionnaires.

Introduction

Anxiety and fear represent the main hindrance to treating teeth. They can even turn into a phobia, making patients avoid or even refuse dental treatment. The correlation between pain and anxiety is of paramount importance [1]. This is because pain develops due to a physiological component and an intense cognitive factor. Patients undergoing anxiety due to dental treatment often experience pain perceptions [1]. It is difficult to assess pain objectively because it involves unpleasant emotions and sensations varying from a child patient to another depending on their social, emotional, and cognitive experiences [2,3].

The undeniable progress of the equipment and techniques used in dental practice have provided patients with much comfort of care. However, although the equipment's evolution has contributed to improving dentists' working conditions, consultation at the dentist's is still a source of stress, anxiety, and even phobia for most patients [4]. The perpetual challenge is to assure our patients' satisfaction without compromising our psychological and physical well-being [4]. This is why more importance than ever has recently been given to communication with patients to provide personalized care depending on each patient's profile. Dentistry is relying more on psychosomatic approaches [5].

To respond to this new vision of patients' care, dentists are trying to change the way they approach their patients by seeking to make them more active in the process of care and consequently resolve certain difficulties in treatment. Hence, hypnosis has recently become a valuable therapeutic means for managing anxiety and stress [5]. Hypnotics or hypnotic dentistry is the science or art of using hypnosis to make dental visits more comfortable and pain-free [6]. This psychological procedure uses suggestion as a means to modify the conscious state of the patient during treatment. It could also be used to improve patient cooperation by increasing confidence [7].

The therapeutical use of hypnosis consists in facilitating change via a focused state of attention. Hypnosis refers to a state of altered consciousness characterized by neurophysiological changes [8]. A hypnotic state is different from a state of meditation or relaxation. It is also characterized by a decrease in external awareness and an increase in the inner awareness's alertness [8]. During hypnosis, a re-organization in the composition of brain oscillations, especially in prefrontal cortex and right occipital EEG channels, is observed [9].

Nowadays, dentists are using hypnosis to moderate fear of dental procedures, excessive gag reflex, treatment of orofacial pain conditions, moderating bleeding and salivary flow and managing procedural pain [7]. Hypnotic techniques such as reframing, distraction, and imagery can also be used in managing pediatric patients [10].

The term hypnosis is often linked to spectacle, skepticism, and even to quackery. Concerning its practice by dentists, it is still marginal or even non-existent [11]. Hence, practitioners should be up to date about clinical hypnosis and its power so that they can facilitate treatment practice professionally, gain patients' trust and above all, avoid putting patients in danger [12]. Indeed, several surveys aimed at evaluating these parameters have been carried out among psychologists, general practitioners, and specialists [11]. In dentistry, however, such investigations are still rare.

Hypnosis could be a useful technique. As a matter of fact, several researchers argue that general practitioners and psychologists should take advantage of hypnosis and dentists as well [13]. To date, no published works have tackled the viewpoints of Tunisian dentists regarding hypnosis. Hence, the aim of the present survey was to evaluate the knowledge and interest of dentists working in the dental clinic of Monastir,

Tunisia, in hypnosis and to understand their attitudes towards hypnosis to integrate it into the list of tools used by dentists.

Material and Methods

Study Design and Ethical Clearance

This is a cross-sectional descriptive study conducted in the clinic of dental medicine of Monastir, Tunisia. A questionnaire was developed using a previous survey on doctors' attitudes to hypnotherapy as a guide [12]. The electronic questionnaire was sent by email to dentists over three months, from October 01 to December 31, 2019. The study received approval from the Ethics Committee of Dental Medicine University (No: 2019/13).

Participants, Eligibility, and Setting

This study was carried out on 202 dentists practicing at the clinic of dental medicine of Monastir. The database of the dental medicine clinic of Monastir shows that the number of dental practitioners at the clinic in 2018 / 2019 with 153 interns, 74 postgraduate students, and 73 professors.

Internal students, postgraduate students, associate professors and professors were included in the sample. However, 4th and 5th students were not included in the survey due to poor practice in dentistry. The questionnaire layout was designed to maximize response rates. A pilot survey of ten subjects was conducted within the Department of dental outpatient, following which changes were made to the questionnaire. With a covering letter and self-addressed envelope, the survey was posted to the participants. The survey is a three-page questionnaire (23 questions) about the respondent's experience, knowledge and attitude about hypnosis and its use in dental medicine. The first section is designed to obtain demographic information about the participants and their knowledge and hypnosis experience. The second set aimed to obtain information about hypnosis's attitudes and beliefs, using a pre-existing scale. The last set is about the motivations of respondents to pursue hypnosis training.

Statistical Analysis

The collected data were analysed using the IBM SPSS (version 20.0 for Windows, IBM, Corp, Armonk, NY, USA). A descriptive analysis was used to generate means and percentages.

Results

The questionnaire response rate was 202/300 (67.3%). Of the respondents, 33.5% were males and 66.5% were females. Ages ranged between 26 and 60 years, with an average age of 28 years. The average age for intern was 24.3 years (± 1.23), 29.5 (± 2.51) for postgraduate students and 49.8 (± 10.23) for professors. Interns represented the majority of respondents at a rate of 54%, followed by postgraduate students 22.5%, associate professor 8.5%, and professor 15%.

The self-assessment of dentists' knowledge of hypnosis was measured on a visual analogue scale (VAS) (0: no knowledge, 10: a lot of knowledge). The self-assessment of hypnosis knowledge stood at 3.45 (1.92). 70% of practitioners believe they have very little hypnosis knowledge. This percentage was calculated by counting the responses of those who scored 4 or less on the VAS (Figure 1).

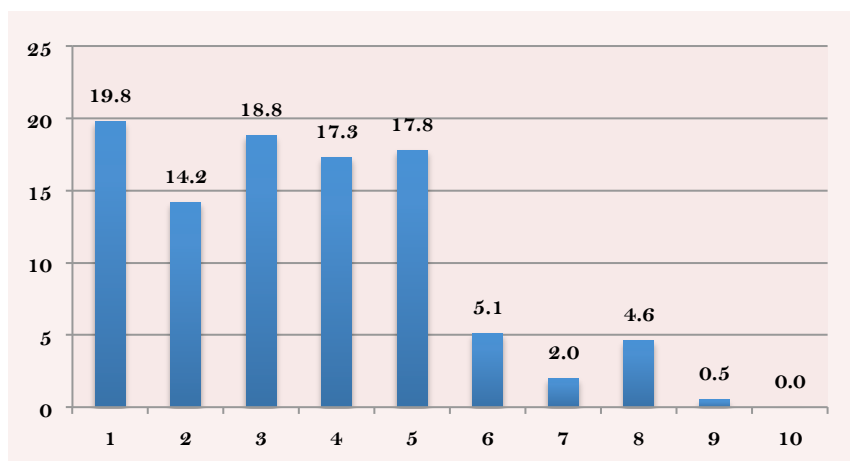


Figure 1. Assessment of general knowledge of hypnosis.

The most common source of information about hypnosis was videos (43.7%), while the least common source reported by the respondents was “other sources of information” (3.5%). The most common being peer discussion (professionals, trainers, clients, friends, relatives, colleagues, and other individuals who had some form of experience with hypnosis) (Figure 2).

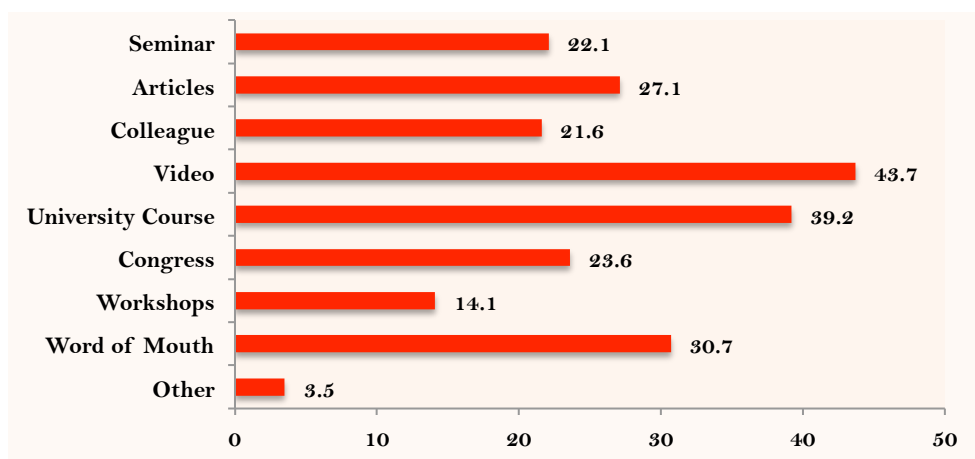


Figure 2. Sources of hypnosis information.

Only 8.5% of dentists could define hypnosis and 57.8% of the respondents think that hypnosis would be accompanied by post-hypnotic amnesia. More than half of the participants (58.1%) believe that it would be difficult for a subject, once hypnotized, not to do what the hypnotherapist asks him/her to do. According to them, hypnosis is associated with a loss of self-control by the patient and a gain of control by the practitioner.

Overall, 89.9% of the sample had reported “yes” to having been previously hypnotized. Among the practitioners declaring themselves to have been hypnotized, training was the most common reason for being hypnotized (47.6%). Only one person (4.8%) indicated that he was hypnotized as part of care (Figure 3).

Only five participants (2.5%) have even practiced hypnosis during dental care and they reported that they rarely do so. In terms of interest, most of respondents (88.3%) consider that hypnosis would essentially allow managing the patient's stress. Moreover, 82.4% of them think that among the benefits of hypnosis is that it brings relaxation to patients (Figure 4).

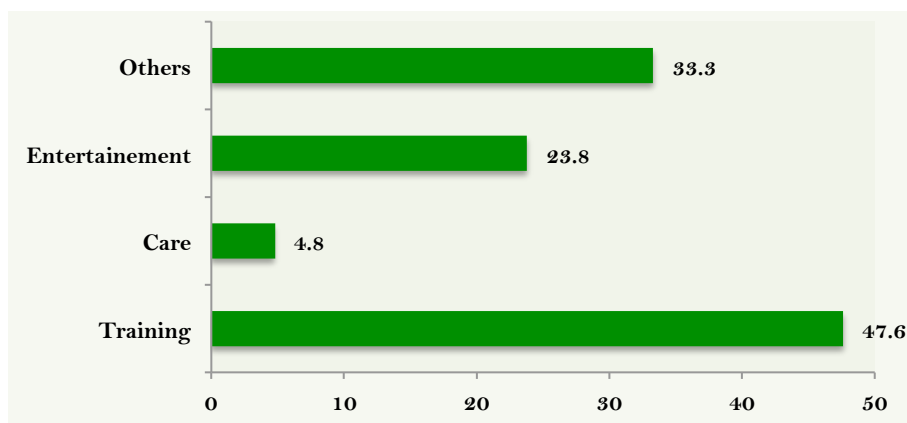


Figure 3. Experience with hypnosis.

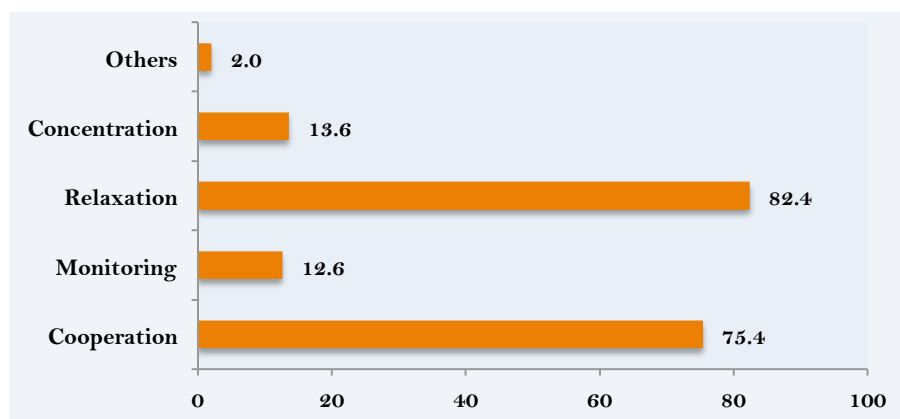


Figure 4. Effect of hypnosis on the patient.

Among the indications for hypnosis in dentistry, 90.5% of participants declared that hypnosis is more indicated in pedodontics, 76.5% in oral surgery and 60.5% in endodontics. 80% of participants consider that hypnosis improves the quality of small surgery on children. The majority of questioned dentists (75.4%) believe that hypnosis allows to diminish or even avoid using anaesthesia and to reduce pain during and after oral surgery. However, only 13.8% of the questioned dentists argued that hypnosis would have real benefits in managing bleeding (Figure 5). The questionnaire results also showed that 60% of practitioners think hypnosis helps deal with pain during and after endodontic treatment.

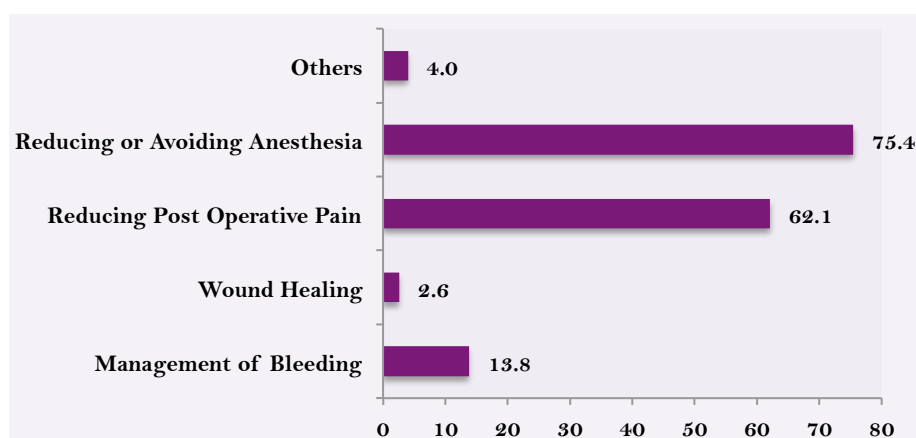


Figure 5. Main indications for using hypnosis in dentistry.

Our study also showed that 78.2% of participants were interested in receiving more theoretical information and desired to attend training on hypnosis. They explained (77%) that facilitating anxious patients' management is the motive behind their desire for such training. Our study also revealed that 68.5% of participants claim that continuing medical education is the most appropriate type of training. Moreover, 87% of them expressed their desire for dentist specific training on hypnosis. Yet, only 12.8% prefer general training in hypnosis.

Discussion

As far as we know, this study is the first comprehensive survey of dentists' viewpoints on hypnosis and its use in dentistry. Hypnosis is a subject that arouses the curiosity of several practitioners because there is little published research exploring Tunisian dentists' knowledge of hypnosis. The mailing method used in this study achieved a high return rate, which revealed a high interest in hypnosis. Our survey targeted only practitioners working in the dental medicine clinic of Monastir. This choice allows to target different grades and different specialties. The study was conducted in a large medical setting representing all major medical specialties.

The respondents' average age was 24.3 years for interns, which is representative of the source population consisting mainly of young doctors. Consequently, the sample seems to represent all the practitioners working in the Clinic of Dental Medicine of Monastir. Our study revealed that, overall, the respondents had poor knowledge of hypnosis. Our results seem to be in accordance with the literature [14]. In a similar survey conducted on a sample of hypnotherapy in the United States, the average was lower [15].

Another study has been conducted on the attitudes and beliefs toward hypnosis held by health professionals in South Australia and its current use in therapy [12]. The study revealed psychologists overall reported a higher level of knowledge, experience, and association with hypnosis. This finding is not unexpected, particularly within Australia, as prior to the deregulation of hypnosis, only psychologists, medical practitioners, dentists, and other professionals approved by the Australian Psychological Board were able to practice hypnosis legally [14]. More precisely, the study revealed a statistically significant correlation between the "level of knowledge" and "grade" [14].

In fact, interns and postgraduates are not as well-versed as their seniors on the subject of hypnosis. The majority of interns have acquired prerequisite knowledge on hypnosis from the training they received at dental medicine faculty. However, professors acquired knowledge on hypnosis from congress and seminars. An analysis of the results not only according to the grade of the participants but also according to specialization would give a more reliable picture of reality. Therefore, we decided to treat the sample as a whole and give an overview of hypnosis's status among practitioners at the dental medicine clinic of Monastir. In fact, hypnosis concerns dentists be they general practitioners or specialists. Furthermore, knowledge about hypnosis for participants was derived more commonly from videos available on the internet. These videos, however, do not often reflect the reality of hypnosis.

In the study of Coldrey et al. [11], the authors found a statistically significant correlation between reliable information sources and attitudes and beliefs toward hypnosis. Other sources of information on hypnosis include mass media and stage shows. Unfortunately, these sources do not reflect the capabilities of hypnosis. In addition, they negatively affect attitudes towards this technique [14].

This lack of knowledge in terms of hypnosis explains why most participants could not give a proper definition of hypnosis. A similar study carried out in France in 2002 showed that only 50% of general practitioners think they know how to provide a clear answer when asked to define hypnosis [13].

Moreover, 58% of practitioners in our study believe that the patient will forget what is happening during the hypnotic trance. Nevertheless, post hypnotic amnesia is not always systematic. In fact, it does not occur unless it has been specifically suggested to the patient. In addition, this amnesia is functional, retrograde, temporary and reversible [16]. During the administration of a prearranged signal, the amnesia is reversed and the person formerly with amnesia can remember events perfectly well [17].

Some participants reported actually using hypnosis during dental care. The most commonly given reasons for not using this technique were either lack of formal training or qualifications or a feeling of not having appropriate skill to apply hypnosis competently. Thomson [18] found that most health professionals who preferred alternative techniques to hypnosis are likely to continue using those techniques.

Other reasons for not using hypnosis are personal and cultural implications. Nonetheless, such reasons were uncommon. Rather, results showed that the shortage of using hypnosis among health professionals in South Australia could be assigned to a lack of understanding, skill and knowledge of its applications [19].

Most respondents consider that hypnosis would essentially allow managing the patient's stress. Indeed, studies have demonstrated that over 60% of dentists consider their profession highly stressful versus other fields [20], and patients with anxiety are the most stressful factors in their daily work [20].

A key indicator for the use of medical hypnosis is treating patients exhibiting dental anxiety. Indeed, the dentist is confronted with all forms of anxiety, ranging from mild uneasiness to full-fledged phobia. This psychological procedure uses suggestion to uniquely modify the patient's conscious state during treatment. This induces a trance, evoked actively by the patient and supported by the dentist [21].

The trance directly decouples the therapy environment by varying degrees of physical and emotional relaxation, anxiolysis, and distortion of time [21]. In pedodontics, hypnosis is equally successful in treating children with reframing, distraction and imagery suggestions, and it is effective in children ages 8 to 12 years [22].

The use of simple “magical lions or hand/finger puppets” can help children to disassociate themselves from the treatment. In fact, children can go into a deep trance with open eyes and can speak without breaking the trance. Trance induction is like a game for the child, which he/she follows eagerly as long as it is exciting and fun [21].

Thus therapeutical uses of hypnosis include dental phobia and anxiety, extensive gag reflex, trigeminal neuralgia pain, benign chronic orofacial pain. Hypnosis also has operative uses, including analgesia during surgery, salivary flow, and faster postoperative recovery.

Using hypnosis in dentistry for analgesia presents several benefits over chemical anesthesia, which annoys the patient for several hours after the procedure and is responsible for patients slurring their speech or inadvertently biting their inner cheek, it avoids chemical risk factors; and it avoids the often dreaded needle. When using hypnosis for analgesia, the patient must reach deep hypnosis, which takes time, and have an environment free from distractions and interruptions.

In a hypnosis study for extracting third molars, ‘hypnotic-focused analgesia’ increased pain thresholds by up to 220%, with patients able to undergo surgery with hypnosis as the sole anesthesia [23]. The study also investigated hypnosis's effect on postoperative recovery, reporting that 93% of hypnosis patients had a decrease in postoperative pain and hemorrhage [23].

Participants’ reported absence of knowledge was complemented by an expressed interest to acquire this knowledge. Further studies revealed frequencies of education and training at 63.4% in Sweden [19]. Gaster et al. [19] argue that to enhance knowledge on hypnosis, materials that are easier to learn and of high-






quality should be incorporated into medical courses. Student learning can be promoted by combining lectures and direct shadowing [19].

Conclusion

In this study, we have explored dentists' attitudes and beliefs towards hypnosis. We have also studied its current use by dentists in Tunisia. We have found that practitioners have a rather weak knowledge of hypnosis and its various applications in dentistry. We have also noticed a growing desire among participants to learn more about hypnosis and its applications in dentistry. Our findings could have important practical implications for Tunisian dentists.

In the future, we plan to analyze the results according to the grade and specialization of participants rather than treating the sample as a whole, which could give a more reliable and faithful image of the reality of hypnosis in the Tunisian context.

Authors' Contributions

EHS		https://orcid.org/0000-0001-5958-4651	Conceptualization, Methodology, Formal Analysis, Investigation, Writing - Original Draft and Writing - Review and Editing.
MHG		https://orcid.org/0000-0001-7937-1485	Conceptualization, Resources and Supervision.
SZ		---	Formal Analysis and Writing - Original Draft.
AK		---	Supervision.
NZ		---	Resources and Supervision.

All authors declare that they contributed to critical review of intellectual content and approval of the final version to be published.

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None.

Conflict of Interest

The authors declare no conflicts of interest.

Data Availability

The data used to support the findings of this study can be made available upon request to the corresponding author.

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References

- [1] Markovi- Duric L, Kos-Dragicevic A, Bektasevic M. Dental anxiety in children aged 6-15 years. *Scr Med* 2015; 46(1):7-11. <https://doi.org/10.5937/Scrimed1501007M>
- [2] Ramirez-Carrasco A, Butrón-Téllez Girón C, Sanchez Armass O, Pierdant-Pérez M. Clinical study effectiveness of hypnosis in combination with conventional techniques of behaviour management in anxiety/pain reduction during dental anesthetic infiltration. *Pain Res Manag* 2017; 2017:1434015. <https://doi.org/10.1155/2017/1434015>
- [3] Mendoza-Mendoza A, Perea MB, Yanez-Vico RM, Iglesias Lineares A. Dental fear in children: the role of previous negative dental experiences. *Clin Oral Investig* 2015; 19(3):745-51. <https://doi.org/10.11007/s00784-014-1380-5>
- [4] Armfield JM, Heaton LJ. Management of fear and anxiety in the dental clinic: a review. *Aus Dent J* 2013; 58(4): 390-407. <https://doi.org/10.1111/adj.12118>
- [5] Jones LM, Huggins TJ. Empathy in the dentist-patient relationship: review and application. *N Z Dent J* 2014; 110(3):98-104.
- [6] Malik M, Pruthvi Raj HV, Maury R, Laller S, Shukla C, Saini R. Hypnodontics: role of hypnosis on oral health. *Int J Emerg Trends Sci Technol* 2016; 20(2):188-90.
- [7] Moss D, Willmarth E. Hypnosis, anesthesia, pain management and preparation for medical procedures. *Ann Palliat Med* 2019; 8(4):498-503. <https://doi.org/10.21037/apm.2019.07.01>

- [8] Demertzi A, Vanhauzenhuysse A, Noirhomme Q, Faymonville ME, Laureys S. Hypnosis modulates behavioural measures and subjective ratings about external and internal awareness. *J Physiol Paris* 2015; 109(4-6):173-9. <https://doi.org/10.1016/j.jphysparis.2015.11.002>
- [9] Muzaffar A. Review of clinical hypnosis in dentistry. *Mod Res Dent* 2018; 1(4):59-60. <https://doi.org/10.31031/MRD.2018.01.000516>
- [10] Dickinson CM, Fiske J. A review of gagging problems in dentistry: 2. Clinical assessment and management. *Dent Update* 2005; 32(2):78-80. <https://doi.org/10.12968/denu.2005.32.2.74>
- [11] Coldrey JC, Cyna AM. Suggestion, Hypnosis and Hypnotherapy: A survey of Use, Knowledge and Attitudes of Anaesthetists. *Anaesth Intensive Care* 2004; 32(5):676-80. <https://doi.org/10.1177/0310057X0403200513>
- [12] Palsson O, Twist S, Walker M. A national survey of clinical hypnosis views and experiences of the adult population in the United States. *Int J Clin Exp Hypn* 2019; 67(4):428-48. <https://doi.org/10.1080/00207144.2019.1649538>
- [13] Chabridon G, Nekrouf N, Bioy A. Etat des lieux des pratiques actuelles de l'hypnose au sein des centres hospitaliers universitaires français. *Encéphale* 2017; 43(5):498-501. <https://doi.org/10.1016/j.encep.2016.06.006>
- [14] Madan A, Pelling N. Hypnosis knowledge, experience, attitudes, and beliefs among South Australian psychologists, counselors, and physiotherapists. *Int J Ment Health* 2015; 44(1-2):11-32. <https://doi.org/10.1080/00207411.2015.1009745>
- [15] Elkins GR, Wall VJ. Medical referrals for hypnotherapy: opinions of physicians, residents, family practice outpatients, and psychiatric outpatients. *Am J Clin Hypn* 1996; 38(4):254-62. <https://doi.org/10.1080/00029157.1996.10403349>
- [16] Yu CKC. Cognitive-behavioural hypnotic treatment for managing examination anxiety and facilitating performance. *Contemp Hypn* 2006; 23(2):72-82. <https://doi.org/10.1002/ch.310>
- [17] Vanhauzenhuysse A, Laureys S, Faymonville ME. Neurophysiology of hypnosis. *Neurophysiol Clin* 2014; 44(4):343-53. <https://doi.org/10.1016/j.neucli.2013.09.006>
- [18] Thomson L. A project to change the attitudes, beliefs and practices of health professionals concerning hypnosis. *Am J Clin Hypn* 2003; 46(1):31-44. <https://doi.org/10.1080/00029157.2003.10403563>
- [19] Gaster B, Unterborn JN, Scott RB, Schneeweiss R. What should students learn about complementary and alternative medicine? *Acad Med* 2007; 82(10):934-8. <https://doi.org/10.1097/ACM.0b013e318149eb56>
- [20] Moore R, Brodsgaard I. Dentists' perceived stress and its relation to perceptions about anxious patients. *Community Dent Oral Epidemiol* 2001; 29(1):73-80. <https://doi.org/10.1034/j.1600-0528.2001.00011.x>
- [21] Rauch C, Panek H. Hypnosis in daily dental practice. *Dent Med Probl* 2008; 45(3):301-6.
- [22] Peretz B, Bercovich R, Blumer S. Using elements of hypnosis prior to or during pediatric dental treatment. *Pediatr Dent* 2013; 35(1):33-6.
- [23] Abdeslahi SK, Hashemipour MA, Mesgarzadeh V, Shahidi Payam A, Halaj Monfared A. Effect of hypnosis on induction of local anaesthesia, pain perception, control of haemorrhage and anxiety during extraction of third molars: a case-control study. *J Craniomaxillofac Surg* 2013; 41(4):310-5. <https://doi.org/10.1016/j.jcms.2012.10.009>