

Nurse's knowledge and perceptions on communicative hypnosis: an observational study

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Abstract. *Background and aim of the study.* Much evidence shows that hypnotic communication can have a pain-relieving effect and reduce complications such as anxiety, insomnia and depression. Whenever this technique was applied, the use of pharmaceuticals was reduced, there were fewer side effects, shorter hospitalization times frames and lower treatment costs. The aim of this study is to evaluate the knowledge and perceptions of nurses about hypnotic communication and the causes for which this technique is not frequently used. A secondary objective pointed to measuring the effectiveness of an educational event on hypnosis. *Method.* The evaluation was done by directly administering an anonymous and voluntary survey created ad hoc, in a pre-test and post-test modality, to nurses subscribed to a four-hour formative event on hypnotic communication organized in 2019 by the Nursing Order, Province of Ravenna. *Results.* 78 nurses (85.7%) participated in the study. The analysis of the pre-test results shows a gap of knowledge regarding hypnotic communication. The variation of answers between the pre-test and post-test (T-Student) has shown a radical difference in knowledge (95%-100% correct answers). The main causes were found regarding the lack of use for hypnotic communication: stereotypes and prejudices related to this technique and insufficient university education. *Conclusions.* The implementation of this technique, effective and efficient under various aspects, requires a preliminary creation of culture regarding this theme, capable of surpassing the stereotypes and resistances brought by a lack of theoretical elements.

Introduction

Neurophysiological studies have demonstrated that hypnosis is different from the effects brought by placebo and sleep (1). The use of *Positron* Emission Tomography (PET) demonstrated that during hypnosis there is an activation of the anterior cingulate cortex in the brain, capable of modifying the perceptions of a person as to reduce painful stimuli (2, 3). Computerized MRI scan has demonstrated that during a hypnotic state there is a substantial amount of activity in

cortex region called DMN or Default Mode Network of the resting-state, present in awake subjects that lack awareness of their surrounding environment (4).

These studies have rekindled the interest towards various uses of this technique in clinical contexts and have allowed the acceptance and possible viability of this type of treatment by the medical-scientific community (5, 6).

Hypnotic communication uses persuasion and suggestions to surpass rational analysis and affects the subconscious, bypassing defenses and stimulating

emotions. Hypnotic communication uses the strength that words have on a neurophysiological level and the bonds between operator and patient. Every experience in the world creates constraints that are in origin neurological (length of sound waves, visual chromatic spectrum), social (rules, language), individual (life experiences) and as such there is no objective reality (7).

This technique is used by doctors, psychiatrists and health workers all of which are specifically trained (8). As for indications regarding the use of these techniques in a medical field, hypnosis might be effective in:

- In reduction of pain for gastrointestinal disorders such as ulcers, irritable colon, colitis, crohn's disease (9);
- In reduction for pain for dermatological disorders like eczema, herpes, neurodermatitis, itchiness, psoriasis, warts (10);
- In reduction of acute and chronic pain back aches, oncological pain, head aches and migraines, arthritis, rheumatism (11-15);
- In reduction of nausea and vomiting as symptoms caused by chemotherapy (16-20);
- In stabilizing hematic flow (21, 22);
- In handling anxiety in cases of acute respiratory events connected to allergies, in particular asthma (23);
- In reduction of hypertension and in invasive vascular procedures (24, 25);
- In reduction of pain connected to the replacement of medication on second degree burns and above (26,28);
- In surgery as an analgesic, especially in cases of allergic or hypersensitive patients or in cases of awake surgery (5, 18, 29,30);
- During childbirth as to reduce nausea caused by pregnancy (gestational hyperemesis) (31);
- As an alternative to pharmaceutical anesthesia in dental contexts (32-34);
- In reduction of anxiety and pain connected to invasive procedures in ambulatory regimes (29-38);
- In reduction of anxiety, through the blocking of the sympathetic reactions caused by stress (16; 39-41);
- In reduction of anxiety and pain in a pediatric patient (42-48).

There are patients that are less effected by hypnosis. The results obtained are differentiated by suggestibility of the subject and the capability of the therapist.

This means that 2 patients with different suggestibility and two therapists, with different levels of technique and communicative-relational skills, might produce very different results (49).

Even though there are various prejudices towards hypnotic communication, some Italian contexts have had for some time health care professionals-such as doctors and nurses- taught in the proper use of this technique, producing positive results. For example, at the Hospital "Città della Salute e della Scienza di Torino" there have been specific courses regarding hypnotic communication and this technique has been used in thousands of procedures, from cardiac ablations to gastrointestinal endoscopy. The use of hypnotic communication in this case has provided positive results in clinical outcomes (such as the reduction of collateral effects connected to pharmaceuticals) and in economical outcome (lower waiting times and use of medicines) (50).

Methods

Aim of the study

The purpose of this study is that of evaluate perspectives and knowledges of nurses regarding the theme of hypnotic communication as to ascertain the main gaps of awareness and the more usual stereotypes that limit the use of this technique within healthcare practices.

A secondary objective of this study is to evaluate the effectiveness of a formative event on hypnotic communication with the purpose of changing preconceptions and gaps of knowledge for professionals.

Design

A descriptive cross-sectional survey was carried out.

Setting

To recruit registered nurses (RNs), we asked the participation of the Nursing Order (OPI) of Ravenna, because it had planned a four-hour training event

about hypnotic communication. Data collection was done during the formative event “The Hypnotic Communication” available only to nurses and organized by the Nursing Order on the 9th march 2019.

Instrument

The survey was divided into a pre-test and a post-test. The questionnaire was made ad hoc by the researchers, in collaboration with the speaker of the training course, based on the topics covered during the formative event.

In the module pre-test there were 4 personal data variables (age, gender, work place, years of experience), 8 questions on the theme of hypnotic communication, the questions are multiple choice directed to evaluate theoretical know-how and two last items done to ascertain stereotypes and prejudices from the participants. Questions about prejudice were only asked in the pre-test because the formative event could influence responses. The module of the post-test had the same 8 theoretical questions and a new question regarding the dimension of preconceptions. The questions about perceptions were placed only in the post-test because the educational event was functional to the response.

The questionnaire’s areas are indicated here below.

Stereotypes questions (pre-test only)

In your opinion, is a person in a state of hypnosis free to come out of it voluntarily?

In your opinion, from 0 to 10, how much of hypnosis is manipulation?

Theoretical questions (pre and post-test)

Item 1 - What is hypnosis?

Item 2 - In what percentage of individuals can hypnotic analgesia be obtained for surgery?

Item 3 - What should a hypnotist do during a diagnostic-therapeutic procedure?

Item 4 - How quickly can a hypnotic induction be obtained?

Item 5 - Which subject is easiest to hypnotize?

Item 6 - What are the objective signs of an effective hypnotic trance?

Item 7 - What percentage of subjects are capable of all hypnotic abilities (e.g., analgesia, catalepsy)?

Item 8 - According to the legislation, who can practice hypnotic communication?

Perception questions (post-test only)

Possible causes for lack of hypnosis communication in clinical practice (indicate three options):

Insufficient university education

Insufficient post-degree formation

Presence of stereotypes and prejudices

Risk of interprofessional conflicts

Complexity of the technique

Not much time during work

Few application contexts

Procedure

The pre-test was distributed before the start of the formative event, after a brief explanation on participation modalities and the compilation of informed consent. During the course, the technical, normative and formative characteristics of hypnotic communication the participants were given.

At the end, the post-test containing the same questions of the pre-test has been administered for evaluating the effectiveness of the formative event. The formative course was held a professional highly qualified on the subject, the President of A.S.I.E.C.I (Italian Scientific Association of Experienced Nurses in Hypnotic Communication). The 8 theoretical questions of the pre-test and post-test were agreed upon with the lecturer of the formative course

Sampling

The questionnaire was administered to all nurses enrolled in the educational event (n. 91); the non-probabilistic sample is composed from all the nurses that voluntarily agreed to participate (n.78).

Data analysis

Data was analyzed with the demo version of SPSS statistical software. Descriptive statistical analyses (frequency, percentage, mean, standard deviation, median) were performed with a 95% confidence interval. A Chi-square test was used for analyzing the nominal variables and an ANOVA test for the cardinal variables.

Ethical considerations

The study was approved by the Bioethics Committee of the University of Bologna (Prot.71554 del 29/3/2019). The instrument was completely anonymous and before releasing it an informative consent was signed by all the participants.

Results

The sample size is of 78 nurses (85.7% of total participants at the formative event). 71 were women (91%) and were 7 men (9%). the average age of the sample is 46 years old (± 10.5) with an average workplace experience of 23 years (± 12.2). Another variable included in the test is the specific area filled in the workplace by the subjects. From the results it's shown that 16.7 % of the participants (n. 13) works in contexts of surgery or hospitalization, the 8.9% in the operating room and equal value in outpatient contexts. Few nurses worked within their territory (5.2%) or contexts like emergency, psychiatry and pediatric (3.8%). A smaller amount (2.6%) of participants worked in intensive care (Tab 1).

Analysis of competencies

Analysis of the results taken from the section regarding theoretical knowledge showed a marked difference between participants' responses before and after the training event (pre-test and post-test). This trend is clear in all 8 items of the survey (Tab. 2).

For instance, in item 1, where the knowledge of nurses was polled regarding the physiology and in particular if it might be attributable to a state of physiological

consciousness (right answer) or in some way altered, the variation of knowledge seems to be clear: from 40.3% in the pre-test to 100% in the post-test.

The variation of answers between the pre-test and post-test has shown a radical difference in knowledge (95%-100% correct answers) non only for item 1 but also the other 4 answers (Fig. 1).

At the moment when the necessary time of induction of the state of hypnosis was asked (item 4) only 6.5% answered correctly in the pre-test phase; namely that it happens in a few minutes. This changed in the post-test, where 67.1% answered correctly.

The connection between patient and a specialized operator in hypnotic communication was analyzed (item 3) and even in the pre-test a correct amount of sensibility was shown among operators which answered correctly 74% of the time, even before the formative event. Even though the type of connection analyzed takes into consideration not only verbal communication but also a type of connection that spans on multiple levels.

As shown by the results the informative event was shown being effective in all the topics taken in

Table 1. Sociographic variables

		m	(sd)	
Age		46	(10.5)	
Years of experience		23	(12.2)	
	Male		Female	
Gender	n	(%)	n	(%)
	7	(9.0)	71	(91.0)
Sector		n	(%)	
Hospitalization		13	16.7	
Operating room		7	8.9	
Emergency		3	3.8	
Intensive care		2	2.6	
Territory		4	5.1	
Psychiatry		3	3.8	
Pediatric		3	3.8	
Ambulatory		7	8.9	
Other		36	46.2	

Table 2. Analysis of knowledge

		Pre test		Post Test		P
		n = R 75-78		n = R 79-80		
		n	%	n	%	
Q1	Incorrect	46	59.7	0	0.0	<,0001
	Correct	31	40.3	80	100.0	
Q2	Incorrect	51	68.0	25	31.3	<,0001
	Correct	24	32.0	55	68.8	
Q3	Incorrect	20	26.0	0	0.0	<,0001
	Correct	57	74.0	80	100.0	
Q4	Incorrect	72	93.5	26	32.9	<,0001
	Correct	5	6.5	53	67.7	
Q5	Incorrect	43	55.1	4	5.0	<,0001
	Correct	35	44.9	76	95.0	
Q6	Incorrect	57	77.0	20	25.0	<,0001
	Correct	17	23.0	60	75.0	
Q7	Incorrect	49	63.6	2	2.5	<,0001
	Correct	28	36.4	78	97.5	
Q8	Incorrect	12	16.0	0	0.0	<,0001
	Correct	63	84.0%	80	100.0	

consideration, modifying the answers of the participants in a statistically significant manner- even though it's an evaluation relative only to the short term.

Analysis of the perceptions

For the analysis of the perceptions some questions were administered between the pre-test and post-test. The first query asked to the participants what was their opinion regarding the capacity of a subject of freely getting out of the hypnosis; more than half of the nurses answered negatively-since a subject under hypnosis can be free of it whenever the patient wishes.

The question that analyzed the perceptions of the nurses in the post-test and looked in to the reason why hypnotic communication in nursing practices. Nurses were given 3 choices out of seven alternatives to choose from. The presence of stereotypes and prejudices was shared among most participants (82.5%) and was considered as the main reason as to why hypnotic communication wasn't used. Another important reason, according to the participants, was the lack of a

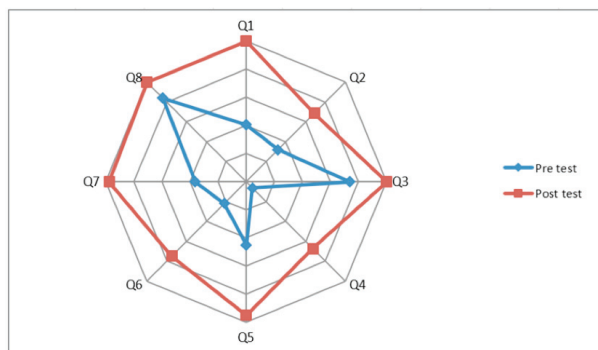


Figure 1. Dispersion of the answers between pre-test and post-test among the 8 items

proper formation regarding the subject. Also, the lack of a proper university formation was identified as an element as to why hypnotic communication wasn't used (Fig. 2).

Discussion

The analysis of results in this study allows us to draw important information on which to reflect. The difference of correct answers between pre-test and post-test variations was statistically significant in all of analyzed items, highlighting the effectiveness of the formative event.

The initial analysis of the expertise brought to light by the pre-test is clear: theoretical knowledge on the theme of hypnotic communication is lacking among nursing professionals. From their perceptions it emerges that these gaps are mainly caused by university education and follow up formative experiences.

However, nurses appeared to be sensitive to relational and communicative dynamics tied to hypnotic communication: in the question regarding the relationship between operator and patient (item 3), indeed in the pre-test most nurses already gave a correct answer, recognizing that at the basis of the hypnotic technique there is an intense and constant relational link: such a thing could be reflected that hypnotic communication is partially and unknowingly applied daily in their field of work.

Experiences seem to be influenced by the forms of spectacle of hypnotism, that has nothing to do with the

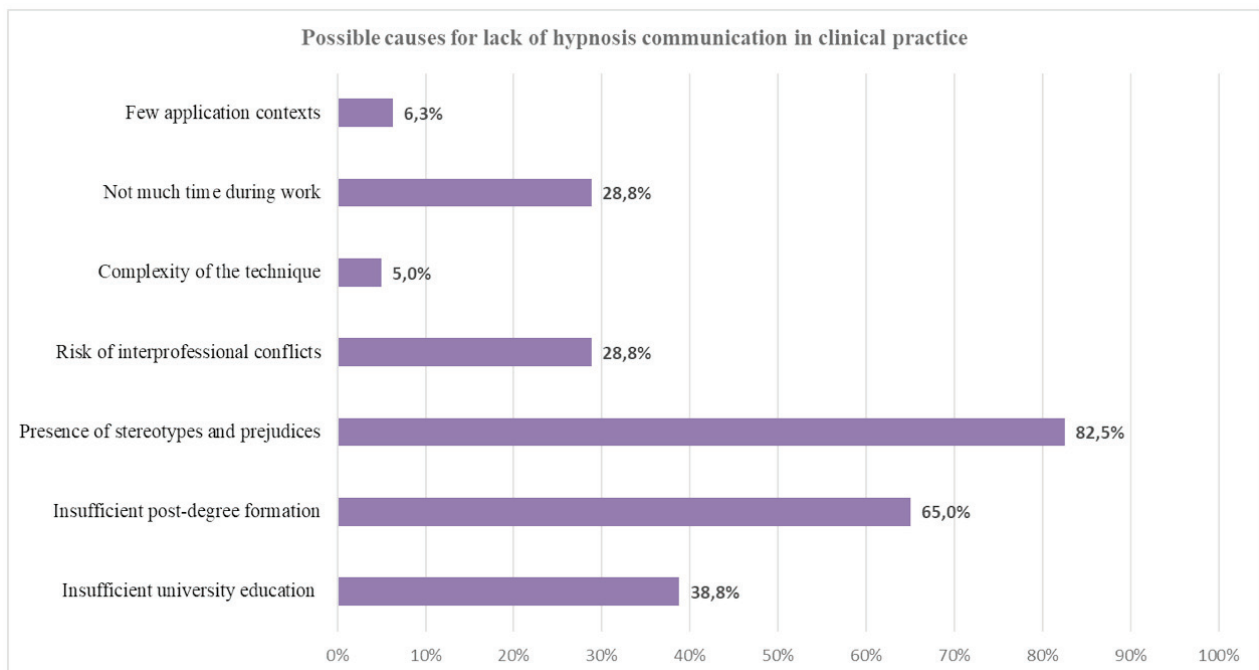


Figure 2. Analysis of perceptions

clinical prospective of this technique. The fact that 6 nurses out of 10 consider hypnosis as a state of “altered” consciousness or even “astral”, and believe that it is impossible for the assisted to voluntarily exit the hypnotic state or that in most cases a manner of manipulation, these factors seem to support this hypothesis. But contrary to popular belief no matter the level of hypnosis, it is the person to maintain total control of their conscience and not the hypnotist making it possible to interrupt the hypnosis in any moment. As expressed by Milton Erickson (51) in obtaining the hypnotic state no form of manipulative influence is done by the hypnotist, but this is derived exclusively by conscious and voluntary activity of the assisted.

Analysis of the causes at the root lack use of hypnotic communication within clinical practices opens up certain points of thought. The fact that 8 out of 10 nurses (82.5%) states that the main obstacle is the presence of stereotypes and prejudices shows an elevated level of self-awareness of participants. It is possible that this realization emerged during the training event, in which several misconceptions about hypnotic communication were refuted. Other determining factor is the training done by the participants, and that because of this nurses

state that practicing hypnotic communication isn't possible given the lack of experience and absence of practice. In such a way there is a “gap” of competences, origin of which—according to the nurses participating in the study – is to be found in a continuous education(65.0%) and in university education (38.8%).

Minor but not negligible is the percentage of those that fear possible inter-professional conflicts (28.8%) manifesting perplexity on the effective levels of autonomy for the nurse in the use of this technique. This result suggests that the best strategy for a correct *knowledge translation* namely a true transfer of these techniques into practice has to start from a proper education and involvement not aimed only for a professional profile but also pointed to develop the competencies of the whole interprofessional team.

The same percentage of participants (28.8%) considers that there is a possibility that there isn't enough time. It's important to reflect on this data, since from the start of the hypnotic suggestion it takes at least 3 to 5 minutes before it's executed: such an element could be caused by preconceptions of the operators.

Lastly, the formative event seems to have contributed in changing perceptions regarding the possible

use of hypnotic communication in clinical practices: only 5% of the participants believe that the complexity of these procedures might represent an obstacle, while, for the 6.4% of the sample, it may not have a wide range of uses.

Conclusions

Hypnotic communication represents a form of intense relation between assisted and operator, based on the creation of a report of trust, respect and empathy.

The results of this descriptive investigation allow some conclusive reflections regarding the sample of nurses that participated in the study.

Three main elements emerge in the study: the *gap* of theoretical knowledge among nurses regarding the theme of hypnotic communication; effectiveness of the formative event upon the expertise and the sharing of elements that hinder the implementation of this technique in daily clinical practices. These elements according to the participants are made out of stereotypes and prejudices on the subject and lack of a proper base and post-base education.

Considering the numerous scientific evidences supporting hypnotic communication in a clinical setting and in how it could be implemented (reduction of side effects, reduction of costs and hospitalization time), it is necessary to reflect on the most appropriate strategies to introduce these techniques in care settings. Starting from the consideration of the participants, the first thing to take into consideration is that of generating a culture, acknowledgment and clarity on the theme, with the end of dissolving uncertainty tied to radical prejudices and mistrust regarding hypnosis. Such an action must engage on all systems and levels: from professionals to the sanitary directives given to citizens\patients.

Such a direction could be taken through the activation of formative events, for citizens and operators, including specific formative courses for operators on all levels (university and continuous formation) with the objective of giving the right tools and know-how as to utilize and apply this knowledge to everyday healthcare.

“*Relationship time is care time*” says the recent Italian Deontological Nurses’s Code (2019) and hypnotic

communication can answer this request, since it’s a real and proper helpful communicative tool, pointed to optimizing the potential of the person. This technique allows nurses to “lead hand in hand” the assisted and helping the person in deal with situations that are more complex than the medical issue: pain, fear and the feeling of powerlessness

Limits of the study: Non-probabilistic convenience sample, composed solely by nurses that volunteered in participating to a formative course regarding hypnotic communication: this might affect their perceptions of the subject matter. The study is single-center and the questionnaire was constructed ad hoc.

Bioethics Committee Protocol: Bioethics Committee of the University of Bologna (Prot.71554 of 29/3/2019)

Conflicts of interest: Each author declares that he or she has no commercial associations (e.g. consultancies, stock ownership, equity interest, patent/licensing arrangement etc.) that might pose a conflict of interest in connection with the submitted article.

References

1. Dumont L, Martin C, Broer I. Functional neuroimaging studies of hypnosis and meditation: a comparative perspective. *Journal Mind Body Regul* 2012; 1:58-70.
2. Rainville P, Hofbauer RK, Bushnell MC, Dunca GH, Price DD. Hypnosis modulates activity in brain structures involved in the regulation of consciousness. *J Cogn Neurosci* 2012; 114:887-901.
3. Kosslyn SM, Thompson WL, Costantini-Ferrando MF, Alpert NM, Spiegel D. Hypnotic visual illusion alters color processing in the brain. *Am J Psychiatry* 2000; 157:1279-84.
4. Lipari S, Baglio F, Griffanti L. Altered and asymmetric default mode network activity in a “hypnotic virtuoso”: an fMRI and EEG study; *Conscious Cogn.* 2012; 21(1):393-400.
5. Montgomery G, David D, Winkel G, Silverstein J, Bovbjerg D. The effectiveness of adjunctive hypnosis with surgical patients: A meta-analysis. *Anesth Analg* 2002; 96(6):1639-1645.
6. Patterson DR, Jensen M. Hypnosis and clinical pain. *Psychol Bull* 2003; 29:495-521
7. Casiglia E. Trattato d’ipnosi e altre modificazioni di coscienza [Treatise on hypnosis and other modifications of consciousness], Padova: Cleup, 2015.
8. Vadrot G. Practice of hypnosis in the nurse care. *Rev Infirm* 2014, (206):31.

9. Montgomery G, Elkins G, White J, Patel P, Marcus J, Perfect M. Hypnosis to manage anxiety and pain associated with colonoscopy for colorectal cancer screening: case studies and possible benefits. *Int J Clin Exp Hypn* 2006; 54(4):416-431.
10. Erssfr S, Cowdell F, Latter S, Gandiner E, Flohr C, Thompson A, Jackson K, Farasat H, Ware F, Drury A. Psychological and educational intervention of atopic eczema in children. *Cochrane Database Syst Rev* 2014; 18(3).
11. Castel A, Perez M, Sala J, Patrol A, Rull M. Effect of Hypnotic Suggestion on Fibromyalgic Pain: Comparison Between Hypnosis and Relaxation. *Eur J Pain* 2006; 11(4):463-468.
12. Elkins, G., Jersen, M. and Patterson, D. Hypnotherapy for the management of chronic pain. *Int J Clin Exp Hypn* 2007; 55(3):275-287.
13. Kirsh K, Thornberry T, Schaeffer J, Wright P, Haley M. An exploration of the utility of hypnosis in pain management among rural pain patients. *Palliat Support Care* 2007; 5(2):147-152.
14. Nusbaum F, Redoutè J, Le Bars D, Volckmann P, Simon F, Gaucher J, Hannaun S, Ribes G, Laurent B, Sappémarinier D. Chronic low-back pain modulation is enhanced by hypnotic analgesic suggestion by recruiting an emotional network: a PET imaging study. *Int J Clin Exp Hypn* 2011; 59(1):27-44.
15. Jones H, Cooper P, Miller V, Brooks N, Whorwell P. Treatment of noncardiac chest pain: a controlled trial of hypnotherapy. *Gut* 2006; 55(10):1403-1408.
16. Deng G, Cassileth B. Integrative oncology: complementary therapies for pain, anxiety and mood disturbance. *CA Cancer J Clin* 2005; 55(2):109-116.
17. Nèron S, Stephenson R. Effectiveness of hypnotherapy with cancer patients trajectory: emesis, acute pain and analgesia and anxiolysis in procedures. *Int J Clin Exp Hypn* 2007; 55(3):336-35.
18. Faymonville M, Vanhauzenhuysse A, Boly M, Baiteau E, Schnakers C, Moonen G, Luxen A, Lamy M, Degueudre C, Brichtant J, Maquet P, Laureys S. Pain and non-pain processing during hypnosis: a thulium-YAG event-related fMRI study. *NeuroImage* 2009; 47(3):1047-54.
19. Kwekkeboom K, Cherwin C, Lee J, Wanta B. Mind-body treatments painfatigue-sleep disturbance symptom cluster in persons with cancer. *J Pain Symptom Manage* 2010; 39(1):126-138.
20. Montgomery G, Sohl S, Stossel L, Schnur J, Tatrow K, Gherman A. (2010). Intentions to use hypnosis to control the side effects of cancer and its treatment. *Am J Clin Hypn* 2010; 53(2):89-96.
21. Jambrik Z, Sebastiani L, Picano E, Santarcangelo E, Ghelarducci B. Hypnotic modulation of flow-mediated endothelial response to mental stress. *Int J Psychophysiol* 2005; 55(2): 221-227.
22. Santarcangelo E, Jambrik Z, Rudisch T, Varga A, Foster T, Carli G. Modulation of pain-induced endothelial dysfunction by hypnotizability. *Pain* 2005; 116(3):181-186.
23. Stewart J. Hypnosis in contemporary medicine. *Majo Clinic Proceedings* 2005; 80(4):511-524.
24. Casiglia E, Schiavon L, Tikhonoff V, Haxhi-Nasto H, Azzi M, Rempelou P, Giacomello M, Bolzon, M, Bascelli A, Scarpa R, Lapenta A, Rossi A. Hypnosis prevents the cardiovascular response to cold pressor test. *Am J Clin Hypn* 2007; 49(4):256-266.
25. Novoa R, Hammond T. Clinical hypnosis for reduction of atrial fibrillation after coronary bypass graft surgery. *Cleve Clin J Med* 2008; 75(2):44-47.
26. Berger M, Davadant M, Marin C, Wassarfallen J, Pinget C, Maravic P, Kock N, Raffoul W, Chiolero R. (2010). Impact of a pain protocol including hypnosis in major burns. *Burns* 2010; 36(5): 639-646.
27. Gamst-Jensen H, Vedel P, Lindberg-Larsen V, Egerod I. Acute pain management in burn patients: appraisal and thematic analysis of four clinical guidelines. *Burns* 2014; 40(8):1463-1469.
28. Provençal SC, Bond S, Rizkallah E, El-Baalbaki G. Hypnosis for burn wound care pain and anxiety: A systematic review and meta-analysis. *Burns* 2018; 44(8):1870-1881.
29. Faymonville M, Boly M, Laureys S. Functional neuroanatomy of the hypnotic state. *Journal of Physiogy Paris* 2006; 99(4):463-469.
30. Facco E, Pasquali S, Zanette G, Casiglia E. Hypnosis as sole anaesthesia for skin tumour removal in a patient with multiple chemical sensitivity. *Anaesthesia* 2013; 68(9):961-965.
31. Beebe K. Hypnotherapy for labor and birth. *Nurs Womens Health* 2014; 18(1):50-59.
32. Ghoneim M, Block R, Sarasin D, Davis C, Marchman J. Tape-recorded hypnosis instructions as adjuvant in the care of patient scheduled for third molar surgery. *Anesth Analg* 2000; 90(1):64-68.
33. Abrahamsen R, Dietz M, Lodahl S, Roepstorff R, Zachariae R, Ostergaard L, Svensson P. Effect of hypnotic pain modulation on brain activity in patients with temporomandibular disorder pain. *Pain* 2010; 151(3):825-833.
34. Mackey E. Effects of hypnosis as an adjunct to intravenous sedation for third molar extraction; a randomized, blind, controlled study. *Int J Clin Exp Hypn* 2010; 58(1):21-38.
35. Lang E, Tan G, Amihai I, Jensen M. Analyzing acute procedural pain in clinical trials. *Pain* 2014; 155(6):1365-1373.
36. Lang E, Berbaum K, Faintuch S, Hatsiopoulou O, Halsey N, Li X, Berbaum M, Laser E, Baum, J. Adjunctive self-hypnotic relaxation for outpatient medical procedures: A prospective randomized trial with women undergoing large core breast biopsy. *Pain* 2006; 126(4):155-164.
37. Montgomery G, Bovbjerg D, Schnur J, David D, Goldfarb D, Weltz C, Schechter C, Graff-Zivin J, Tatrow K, Price D, Silverstain J. A randomized clinical trial of a brief hypnosis intervention to control side effects in breast surgery patients. *J Natl Cancer Inst* 2007; 99(17):1304-1311.
38. Flory N, Lang E, Martinez-Salzar G. (2007). Hypnosis for acute distress management during medical procedures. *Int J Clin Exp Hypn* 2007; 55(3):303-317.

39. Lang E, Berbaum K, Pauker S, Faintuch S, Salaza G, Lutgendorf S, Laser E, Logan H, Spiegel D. Beneficial Effects of Hypnosis and adverse effects of empathic attention during percutaneous tumor treatment: When being nice does not suffice. *J Vasc Interv Radiol* 2008; 19(6): 897-905.
40. Lang E, Ward C, Laser E. Effect of team training on patients ability to complete MRI examinations. *Academic Radiology* 2010; 17(1):18-23.
41. Saadat H, Drummond-Lewis J, Maranets I, Kaplan D, Saadat A, Wang S, Kain Z. Hypnosis reduces preoperative anxiety in adult patients. *Anesth Analg* 2006; 102(5):1394-96.
42. Cyna A, Tomkins D, Maddock T, Barker D. (2007). Brief hypnosis for severe needle phobia using switch-wire imagery in a 5-year old. *Pediatric Anesthesia* 2007; 17(8):800-804.
43. Mackenzie A, Frawley P. Preoperative hypnotherapy in the management of a child with anticipatory nausea and vomiting. *Anaesth Intensive Care* 2007; 35(5):784-787.
44. Stinson J, Yamada J, Dickson A, Lamba J, Stevens B. Review of systematic reviews on acute procedural pain in children in the hospital setting. *Pain Res Manage* 2008; 13(1):51-57.
45. Uman L, Chambers C, McGrath P, Kisely S. Systematic review of randomized controlled trials examining psychological interventions for needle-related procedural pain and distress in children and adolescent: an abbreviated Cochrane Review. *J Pediatr Psychol* 2008; 33(8): 842-855.
46. Lioffi C, White P, Hatira P. A randomized clinical trial of a brief hypnosis intervention to control venepuncture-related pain of paediatric cancer patients. *Pain* 2009; 142(3):255-263.
47. Bayat A, Ramaiah R, Bhananker S. Analgesia and sedation for children undergoing burn wound care. *Expert Review Neurother* 2010; 10(11):1747-1759.
48. Rutten J, Korterink J, Venmans L, Benninga M, Tabbers M. Nonpharmacologic treatment of functional abdominal pain disorders: a systematic review. *Pediatrics* 2015; 135(3):522-535
49. Perussia F. *Manuale di ipnosi [Manual of hypnosis]*. Milano: Unicopli; 2011.
50. Muro M. La comunicazione ipnotica nel percorso clinico del paziente: esperienze e risultati nell'Azienda Molinette di Torino [Hypnotic communication in the patient's clinical pathway: experiences and results in the Molinette Hospital in Turin] *La L'infermiere* 2016; 1:30-32
51. Erickson MH. (1982). *The Nature of Hypnosis and Suggestion*. Roma: Astrolabio-Ubaldini, 1982.

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