### **GIFIL**

# INNOVAZIONE E PROSPETTIVE INFERMIERISTICHE

Pavia, Fondazione IRCCS Policlinico San Matteo

24 maggio 2025

L'ipnosi clinica: uno strumento di cambiamento La comunicazione ipnotica: un'alleata nella gestione procedurale

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### **Disclosures of Name Surname**

Company name	Research support	Employee	Consultant	Stockholder	Speakers bureau	Advisory board	Other
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### COSA NON E' L'IPNOSI

NON è uno stato di sonno

NON è nulla di magico o mistico



NON si perde il controllo delle proprie azioni

## MILTON ERIKSON: IL PADRE DELL'IPNOSI MODERNA

L' ipnosi come strumento terapeutico

Valore della singolarità e particolarità

Aiutare i pazienti a superare i sintomi che li assillavano

Il linguaggio come strumento di trasformazione

L'ipnosi ericksoniana, all'interno di un contesto scientifico e di sperimentazione continua, perde l'aspetto spettacolare e manipolatorio che caratterizzava la vecchia ipnosi, per restituire potere alla persona, alle sue risorse e alla relazione con l'ipnoterapeuta.

### L'IPNOSI

una condizione mentale **fisiologica**: la persona impiega le proprie risorse mente-corpo focalizzandole su un'immagine, un'attività o una sensazione per ottenere un fenomeno che in una condizione ordinaria di coscienza non sarebbe possibile.

Durante la trance ipnotica il soggetto si rilassa, riesce a isolarsi parzialmente dall'ambiente esterno ottenendo calma e autocontrollo.

La comunicazione ipnotica è uno strumento efficace che può essere adottato in autonomia dall'infermiere per:

migliorare l'assistenza al paziente

gestire l'ansia

gestire il dolore

Gestire i sintomi durante i percorsi terapeutici

L'infermiere esperto è quindi un professionista della salute che, dopo un percorso formativo, è in grado di erogare un'assistenza di qualità, in quanto è in grado attraverso l'ipnosi di ottenere effetti benefici sul paziente, sul controllo di ansia e dolore e di ridurne questi sintomi almeno del 50%. (Casiglia et al., 2007)

Il ruolo dell'infermiere esperto in comunicazione ipnotica è proprio quello di creare un'alleanza terapeutica per aiutare il paziente a mobilizzare le proprie risorse interiori, spesso non conosciute ed ignorate, per risolvere e gestire i sintomi/problemi.

Nella pratica infermieristica l'**aspetto relazionale e comunicativo** sono una parte essenziale del processo di assistenza.

Attraverso la comunicazione ipnotica la persona presa in carico viene aiutata a gestire le proprie emozioni e a esternare il proprio malessere che si nasconde spesso dietro la diagnosi di una malattia o dietro alla sofferenza.

L'infermiere esperto è in grado di costruire rapidamente una relazione di fiducia con i pazienti utilizzando un linguaggio rassicurante, calmo ed empatico.

## QUAL' È IL RUOLO DELL'INFERMIERE ESPERTO IN COMUNICAZIONE IPNOTICA?

Deve saper applicare in modo sicuro e appropriato le tecniche ipnotiche

Deve essere in grado di comunicare in modo empatico

Deve conoscere le diverse tecniche di induzione ipnotica e saper formulare suggestioni personalizzate per quella persona

Deve saper adattare l'approccio ipnotico al paziente

Deve saper insegnare l'autoipnosi

## GLI ELEMENTI FONDAMENTALI NELLA COMUNICAZIONE IPNOTICA

Rapporto di fiducia

Posto sicuro e suggestioni positive

Autoipnosi

### RAPPORTO DI FIDUCIA

**Conoscere** la persona per raccogliere alcune informazioni di base prima dell'induzione ipnotica

Necessario per ottimizzare il rapporto empatico con il paziente e scegliere gli elementi che si adattano meglio a lei (es. Hobby, colore preferito, nickname etc..)

### POSTO SICURO

Fondamentale per creare un ambiente mentale e psicologico in cui il paziente si possa sentire **protetto, rilassato, libero da ansie e paure**. Portare la persona nel suo posto sicuro favorisce il rilassamento, la concentrazione, la riduzione di stress e fattori ansiogeni.

### SUGGESTIONI POSITIVE

Sono tutte quelle **immagini**, che vengono formulate allo scopo di creare una risposta mentale, emotiva e comportamentale desiderata nel paziente.

Si utilizzano termini e parole **sempre positive**, prive di negazione o ambiguità perché devono facilitare l'esperienza ipnotica ad essere chiara e diretta.

Rafforzano le risorse del paziente, incoraggiandolo a credere nelle proprie capacità fisiche e mentali e grazie a queste impara a utilizzarle autonomamente

### AUTOIPNOSI

È la "chiave" per usufruire in modo autonomo dei benefici di rilassamento profondo e completo, di recupero delle energie e risorse.

Grazie a **tecniche di ancoraggio** che gli consentiranno di autoindursi tutte le volte che ne sente il bisogno.

## PERCHE' LA COMUNICAZIONE IPNOTICA NELL'AMBITO EMATOLOGICO?

- > Il percorso di cura è spesso lungo e complesso
- > Chemioterapie invasive
- Lunghi periodi di ospedalizzazione
- > Sentimenti di incertezza della prognosi
- > Grande cambiamento nello stile di vita
- ➤ Al momento della diagnosi si sentono "come se fossero stati travolti da un treno".

L'infermiere esperto in comunicazione ipnotica è quindi in grado di dare un forte contributo sia nella sfera psicologica sia nella gestione di sintomi associati alla malattia.

### GESTIONE DELL'ANSIA E DEL DOLORE

- > Ridurre l'ansia pre-procedurale e procedurale
- Diminuire la percezione del dolore, migliorando l'esperienza grazie a tecniche di dissociazione, suggestioni, metafore o visualizzazioni
- Migliorare la compliance e la tolleranza del paziente, riducendo anche l'uso di sedativi e analgesici

### DISTURBI DEL SONNO

I disturbi del sonno sono strettamente legati alla **sfera psicologica** che vive il paziente ematologico, all'ansia e allo stress, nonché al **malessere fisico**.

- > migliorare la qualità complessiva del sonno
- > si riducono i risvegli notturni e si favoriscono i cicli più regolari e continui.
- riduce i tempi per addormentarsi e quindi il paziente sperimenta un sonno più profondo e più riposante.

Il paziente "addestrato" all'autoipnosi poi ha il beneficio di praticarla anche una volta a casa prima di andare a letto.

### GESTIONE DELLA NAUSEA

Diversi studi, ma anche la personale esperienza clinica, dimostrano come la comunicazione ipnotica risulti efficace anche nella gestione dei sintomi come la nausea, andando ad alleviarla.

L'ipnosi lavora sul sistema nervoso autonomo, quindi inducendo uno stato di totale rilassamento, si riescono a gestire i riflessi del vomito e della nausea.

Fondamentale è creare suggestioni positive che vadano ad influenzare positivamente la percezione della nausea.



La letteratura scientifica...

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## Hypnosis for Symptom Management in Adult Cancer Patients: What is the Evidence?

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Keywords Hypnotherapy · Hypnosis · Cancer · Symptoms · Procedure-related symptoms · Anxiety · Distress

#### Opinion Statement

As a palliative care specialist and a hypnotherapist, I use therapeutic communication and conversational hypnosis daily in my patient — doctor relationship. Formal hypnotherapy sessions are integrated in my practice whenever patients are open or wish for such an approach in relation to a specific symptom, for better overall management of their disease burden and/or enhanced well-being. Although hypnosis has been used for centuries in medical practice and for thousands of years in healing practices in ancient cultures all over the world, the evidence remains scarce. Nevertheless, in the last 10 years several randomised controlled trials have been conducted, building up an evidence base. In contrast to most oncological treatments, hypnotherapy is far from being considered evidence-based "standard care". It is however, if practiced by a trained health care professional, almost free of side effects and therefore potentially has a very favourable benefit-to-harm ratio. The question arises whether hypnotherapy will ever become a standard of care intervention? This seems unlikely since its efficacy may be influenced by the patient's belief in hypnosis and compliance to therapy. Furthermore, a fundamental necessity is a personalised approach that moves hypnotherapy more into the category of individual-centred care rather than standard care.

#### Anxiety and distress

Applicy and distress may be felt at any stage following a cancer diagnosis. This may hinder the pursuit of treatment or even prevent patients from receiving curative cancer therapy. Although anxiolytic drugs may be of some help to some patients, they should be avoided if possible, to enable complementary approaches to be tried. Hypnosis is one of these approaches which has shown to be of use in several studies. Chen et al. found in their comprehensive meta-analysis including RCTs and pre-post-design studies [3], that hypnosis significantly improved the participant's immediate anxiety compared to standard care, attention care, distraction or cognitive-behaviour-therapy (CBT). Furthermore, the effect was maintained over time (from 1 to 6 months after the intervention) with particular benefit in paediatric patients and patients with haematological malignancies undergoing procedures such as lumbar puncture, bone marrow aspiration or venipuncture. Hypnotherapy guided by a therapist was shown to be more helpful than self-hypnosis.

#### Procedure-related symptoms

Any surgical intervention is associated with a certain degree of anxiety and distress, procedure clated pain or prolonged pain post-intervention, as well as name a and/or vomiting. The impact of hypnosis on any of these symptoms is one of the best studied areas, particularly in patients with breast cancer, where recent trials with adequate sample sizes have been published. A summary of the studies is listed in Table 1.

In a large observational study involving 300 patients in a Belgium Breast Cancer Clinic, women were asked before breast surgery whether they wanted to participate either in a standard general anaesthesia group or in a hypno-sedation group (without general anaesthesia). One hundred and fifty consecutive participants were included in each group and compared according to several outcomes. The hypno-sedation group had a statistically significant shorter duration of hospitalisation, needed less post-mastectomy lymph drainage and reported less anxiety in the post-operative period. Furthermore, the effect was sustained, and asthenia was also decreased during subsequent adjuvant therapy. Despite the fact that it was not a randomised trial, the results highlight several benefits including avoidance of general anaesthesia [12].

#### Cancer pain

#### Cancer-related fatique

Cancer-related fatigue is often a difficult symptom to treat. There are no specific medical treatments that have shown convincing results [22]. Various complementary approaches as well as a healthy lifestyle may be more promising in improving fatigue. Several trials have been undertaken including hypnosis as a part of a multidimensional approach. There are no studies testing

A randomised controlled study with a small sample size (N=44) involving patients with various cancers demonstrated that hypnosis combined with CBT was significantly more effective in improving fatigue than the control discussion only group [23].

Grégoire et al. have studied cancer-related fatigue and the impact of hypnosis in several clinical trials. In a non-randomised multiple arm trial that included 114 patients with non-metastatic breast cancer, patients were offered to participate in any of the three groups: yoga, self-hypnosis or CBT. A fourth control group was formed with the 24 patients who declined to participate. Outcomes were measured at 9 months after the intervention and showed a sustained decrease in fatigue, anxiety and depression scores in the hypnosis group. Only the yoga group also reported lower anxiety scores. CBT intervention had no impact on any of the symptoms measured [24].

Results of another trial by Grégoire et al. were published in 2021 [25••]. Ninety-five patients with breast cancer were randomly assigned to either an 8-week group intervention combining self-hypnosis training and self-care instructions or to a waiting list group. This study showed a significant immediate decrease in emotional distress and improvement in insomnia. A secondary analysis including data on the same symptoms 1 year later proved that the positive effect of the combined intervention was sustained over this time period [26••].

Pain is very frequent not only in patients with active cancer, but also in cancer survivors and has a high negative impact on the quality of life. Two thirds of patients with advanced disease, up to 55% receiving cancer treatment and around 40% of cancer survivors have reported pain [17]. There are various mechanisms implicated in the pain perception, such as nociceptive and neurological damage directly caused by the cancer or by cancer treatment or surgery.

Most of the studies that tested hypnosis in cancer patients experiencing pain were carried out in procedural, surgical or radiotherapy-related pain situations as discussed above. For this reason, the recently published Society for Integrative Oncology (ASCO) Guidelines only recommend hypnosis for procedural or surgical pain in adult cancer patients and preferably with hypnosis provided during the whole intervention and not as a single pre-intervention session or self-hypnosis. These guidelines are based on five RCTs, graded as intermediate in quality of evidence and with only a moderate strength of recommendation. For other types of pain, the evidence is either too weak to be recommended or still needs to be demonstrated in controlled clinical trials [18••].

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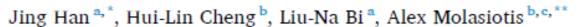
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#### Complementary Therapies in Medicine





#### Mind-body therapies for sleep disturbance among patients with cancer: A systematic review and meta-analysis



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#### ARTICLEINFO

Keywords: Cancer Mind-Body Therapy Sleep disturbance Insomnia Meta-analysis Systematic review

#### ABSTRACT

Objectives: To assess whether mind-body therapies (MBTs) are effective for relieving sleep disturbance among

Design: Systematic review and meta-analysis of randomized controlled trials (RCTs).

Methods: Seven English electronic databases were searched from the date of inception to September 2022. All RCTs that included adults (≥18 years) who were treated with mindfulness, yoga, qigong, relaxation, and hypnosis were screened. The outcome was subjective and/or objective sleep disturbance. The revised Cochrane tool (RoB 2.0) was applied to evaluate the risk of bias. The RevMan software was applied to assessed each outcome according different control groups and assessment time points. Subgroup analyses were performed according to different categories of MBTs.

Results: Sixty-eight RCTs (6339 participants) were identified. After requesting for missing data from corresponding authors of included RCTs, 56 studies (5051 participants) were included in the meta-analysis. The metaanalysis showed a significant immediate effect of mindfulness, yoga, relaxation, and hypnosis on subjective sleep disturbance, compared with usual care or wait list control, and the effect of mindfulness lasted at least 6 months. For objective sleep outcomes, we observed significant immediate effects of yoga on wake after sleep onset and of mindfulness on sleep onset latency and total sleep time. Compared with active control interventions, MBTs had no significant effect on sleep disturbance.

Conclusions: Mindfulness, yoga, relaxation, and hypnosis were effective in sleep disturbance severity reduction among patients with cancer at post-intervention, and the effect of mindfulness lasted at least 6 months. Future MBTs studies should apply both objective and subjective sleep measurement tools

#### 1. Introduction

Sleep disturbance is a common problem for patients with cancer. The incidence rate of sleep disturbance among patients with cancer ranges from 30% to 93%, which is three times that of non-cancer populations (9-33%).1,2 Poor sleep persists in patients diagnosed with and undergoing treatment for cancer and can last for months or years after complete treatment.3,4 In patients with cancer, sleep disturbance is

impairment, and poor quality of life;5-7 further, it increases the risk of infection and death. 8,9 The underlying mechanism of cancer-induced sleep disturbance is multi-factorial and appears to be associated with inflammation, endocrine factors, neurological factors, metabolic stress, circadian disruption, and other factors. 11 Liu et al. 12 found that the poor sleep quality of patients with breast cancer is related to changes in the levels of inflammatory markers, such as interleukin-1, interleukin-6, and tumor necrosis factor; moreover, these inflammatory cyassociated with physical fatigue, psychological distress, cognitive tokines can directly affect sleep nuclei, neurotransmitters, and the

leep disturbance, and weeks, 83-86 The in-= 2). Two<sup>83,84</sup> of the ificant immediate efignificance, with high thly positive results 83, (SMD = 0.02, 95% CI: $y (Chi^2 = 1.37, I^2 =$ I no significant shorthowed no significant . S2).

) outcomes, compared g were compared with bjective sleep disturd at 8-12 weeks. 83,85, nd taichi (n = 5). The istance training, edue six studies 83,85,87-90 immediate effect. i heterogeneity. After nich compared qigong n-significant (SMD = neterogeneity (Chi<sup>2</sup> = udies85,88 reported a e studies reported no Neither of the two it long-term effect.

included exercise (n = 2), CBT (n = 1), and calligraphy (n = 1). One 94 of the four studies 91,94,96,97 (25%) reported a statistically significant immediate effect. Meta-analysis results showed no immediate effect (p = 0.80), with high heterogeneity, which remained high  $(I^2 > 50\%)$ after we excluded any of the four studies. All the two studies 94,97 reported no statistically significant short-term effect. Moreover, meta-analysis results showed no significant short-term effect (p = 0.29), with high heterogeneity. (Table 3 and Supplementary Fig. S3).

#### 3.4.5. Hypnosis studies

Two studies conducted on hypnosis were compared with UC/WL intervention studies reporting subjective sleep disturbance. 98,99 One of the two studies. 98,99 (50%) reported a statistically significant immediate effect. Meta-analysis results showed a significant effect (p = 0.01), with high heterogeneity. (Table 2 and Supplementary Fig. S2).

#### 3.5. Studies not included in the meta-analysis

Among the 12 studies in this systematic review that were excluded from the meta-analysis, 2, 2, 3, 2, 1, 1, and 1 studies assessed yoga, 41,42 mindfulness, 37,38 qigong, 34,36,40 relaxation, 35,39 meditation, 43 imagery,44 and mixed mind-body intervention,45 respectively. These studies had the following outcome results. The two parallel RCTs on yoga concluded that, compared with WL control, the interventions were effective in improving sleep after treatment, 41,42 which was in accordance with the findings of previous meta-analyses on yoga. The two remaining studies wherein mindfulness was compared with UC or WL control, showed evidence of improved sleep quality; one study

Abbreviations: CBT, cognitive-behavior therapy; EORTC-QLQ-C30, European Organization for Research and Treatment of Cancer Quality of Life Questionnaire-Core 30; ISI, Insomnia Severity Index; MBCT, mindfulness-based cognitive therapy; MBT, mind-body therapies; MBI, mindfulness-based intervention; MBSR, mindfulness-based stress reduction; PROMIS, Patient-Reported Outcomes Measurement Information System; PSQI, Pittsburgh Sleep Quality Index; RCTs, randomized controlled trials; SE, sleep efficiency; SOL, sleep onset latency; TST, total sleep time; UC, usual care; WASO, wake after sleep onset; WL, wait list.

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#### Journal of Psychosomatic Research





Review article

### Hypnosis as a non-pharmacological intervention for invasive medical procedures - A systematic review and meta-analytic update



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#### ARTICLEINFO

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Anxiety reduction
Invasive procedures
Non-pharmacological intervention

#### $A\ B\ S\ T\ R\ A\ C\ T$

Hypnosis is recognized as an effective non-pharmacological intervention for managing anxiety, pain, and physiological stress during invasive medical procedures. Despite its growing use, variability in techniques and inconsistent outcome measurements have challenged its clinical standardization. This systematic review and meta-analysis evaluated the effectiveness of hypnosis in reducing anxiety, pain, and physiological stress during invasive procedures, while identifying the most effective techniques as well as assessing analgesic use and safety. A comprehensive literature search was conducted in PubMed, Cochrane Library, and Scopus to identify randomized controlled trials (RCTs) evaluating hypnosis in invasive procedures. Eligible studies were assessed for bias using the Revised Cochrane Risk of Bias Tool. Meta-analyses were performed with a random-effects model, and subgroup analyses were conducted based on hypnosis techniques, patient characteristics, and procedure types. Twenty RCTs with 1250 patients were included. Hypnosis significantly reduced anxiety (SMD = -0.43, 95 % CI: -0.58 to -0.28, p < 0.001) and pain (SMD = -0.35, 95 % CI: -0.50 to -0.20, p < 0.001) compared to standard care. Subgroup analyses indicated that virtual reality-enhanced hypnosis and tailored interventions for high-anxiety procedures were most beneficial. Physiological stress markers, including heart rate and blood pressure, were also reduced, supporting the calming effects of hypnosis. Adverse effects were minimal. Hypnosis is effective and safe for reducing anxiety and pain during invasive medical procedures. Standardized protocols and further research are needed to optimize its clinical use and enhance adoption in routine care.

#### 3.2. Primary outcomes: Anxiety and pain reduction

The pooled analysis demonstrated that hypnosis significantly reduced anxiety and pain compared to control interventions. The standardized mean difference (SMD) for anxiety reduction was -0.43 (95 % CI: -0.58 to -0.28, p < 0.001), indicating a small effect size favoring hypnosis according to the interpretation from Cohen (2013) [21]. For pain reduction, the pooled SMD was -0.35 (95 % CI: -0.50 to -0.20, p < 0.001), also reflecting a small effect size. Heterogeneity among studies was assessed using the I<sup>2</sup> statistic. The I<sup>2</sup> values for anxiety and pain reduction were 45 % and 38 %, respectively, indicating moderate heterogeneity. These findings suggest that hypnosis may effectively alleviate both psychological distress and physical discomfort associated with these procedures.

#### 3.3. Secondary outcomes: Physiological parameters

Significant reductions in physiological parameters were observed in patients undergoing hypnosis. The pooled analysis of heart rate changes showed a mean difference of -5.8 bpm (95 % CI: -7.2 to -4.4, p < 0.001), indicating a reduced heart rate which may suggest a calming effect of hypnosis on cardiac activity. Blood pressure was also significantly reduced, with a mean difference of -6.3 mmHg (95 % CI: -8.5 to -4.1, p < 0.001). These findings support the hypothesis that hypnosis not only reduces subjective pain and anxiety but also modulates physiological stress responses during invasive procedures.

#### 3.4. Impact on analgesic use

Several studies reported on the use of analgesics during procedures. In studies where this was assessed, hypnosis significantly reduced the need for pain medication. For example, one study involving atrial flutter ablation reported a significant reduction in morphine use in the hypnosis group  $(1.3 \pm 1.3 \text{ mg vs. } 3.6 \pm 1.8 \text{ mg}, p < 0.001)$ , highlighting the potential of hypnosis to minimize reliance on pharmacological interventions [22]. Another study on coronary artery bypass grafting noted reduced use of remifentanil  $(34.4 \pm 11.4 \text{ mg vs. } 50.0 \pm 13.6 \text{ mg}, p = 0.001)$  and morphine  $(4.9 \pm 3.3 \text{ mg vs. } 13.6 \pm 2.7 \text{ mg}, p < 0.001)$  among patients receiving hypnosis [23].

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Article

### Practicing self-hypnosis to reduce chronic pain: A qualitative exploratory study of HYlaDO

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#### Abstract

**Background:** Nearly a quarter of Canada's population suffers from chronic pain, a long-lasting medical condition marked by physical pain and psychological suffering. Opioids are the primary treatment for pain management in this condition; yet, this approach involves several undesirable side effects. In contrast to this established approach, non-pharmacological interventions, such as medical hypnosis, represent an efficient alternative for pain management in the context of chronic pain. HYlaDO is a self-hypnosis program designed to improve pain management for people with chronic pain.

Purpose: This research aimed to evaluate the HYlaDO program based on the proof-of-concept level of the ORBIT model and investigated participants' subjective experience.

Research design: Qualitative study.

Study sample: Seventeen participants with chronic pain took part in this study.

**Data collection**: We conducted individual semi-structured interviews with patients who had participated in HYlaDO to identify the three targets of desired change: pain, anxiety and autonomy in self-hypnosis practice.

**Results**: Thematic analysis revealed that the practice of hetero-hypnosis and self-hypnosis decreased (i) pain and (ii) anxiety. Also, it (iii) indicated the development of an independent and beneficial self-hypnosis practice by having integrated the techniques taught.

**Conclusion**: These results confirm that the established targets were reached and support further development, implementation and scaling up of this program. Consequently, we believe it is justified to move to the next step of program development.

#### Keyword:

Hypnosis, chronic pain, anxiety, group intervention, qualitative study

#### Introduction

#### Chronic pain

In Canada, nearly a quarter of the population suffers from chronic pain, a medical condition marked by longlasting physical pain and psychological distress. <sup>1</sup> Chronic pain represents a personal burden. It can transform even the most mundane tasks into insurmountable challenges. Unfortunately, waiting times for patients suffering from chronic pain can be long. For

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David Ogez, Research Center, Maisonneuve-Rosemont Hospital, 5415 Bd de l'Assomption, Montreal, QC H1T 2M4, Canada. Email: david.ogez@umontreal.ca Experience session. A majority of participants (9/17) reported imagining visiting pleasant places during their self-hypnosis sessions. For example, P17 mentioned: For me, the quietest times are when I'm looking for a place where I feel good. Yeah, I've lived at the beach a lot, so sometimes I go to the beach, but that's just the way it is. I've seen it before. I prefer to go to a place where there is a lot of flora, plants, where I can breathe, feel the life of the smells, whereas usually here I am stuck. [Interviewer: What kind of smells?] Lavender. Yes, yes, there are many smells too. I have the smell of lemongrass that I loved when I was in my grandmother's house'.

Returning to the waking state. The participants (7/ 17) who mentioned returning from their hypnotic trance named doing so naturally and quietly. For example, P21 mentioned: 'You know how much better I feel. I'm kind of aware that I've had enough. It's really automatic. You know, I just feel; I feel awareness; I feel less stressed; I feel less pain'. A recurring aspect is the ease of return because of the shallow depth. It is well illustrated

#### Discussion

The present study aimed to investigate the subjective experience of participants in their practice of heterohypnosis and self-hypnosis following their enrolment into the HYlaDO program for patients with chronic pain. In the ORBIT framework, the current study is the proof of concept – which evaluates the potential benefits of this intervention.

In this regard, we established three objectives. We questioned participants about their perception of hetero-hypnosis and self-hypnosis effect on their levels of (i) pain; and (ii) anxiety. Furthermore, we evaluated (iii) if the participants had developed an independent and beneficial self-hypnosis practice by having integrated the taught techniques into their daily life for the management of chronic pain and other related challenges.

We will discuss our results under the light of these objectives. This will be done according to the themes related to hetero-hypnosis and then, according to the themes related to self-hypnosis. Note that some additional remarks concerning ways optimise the program.

Hypnosis themes - objective attainment

Theme 1 (Subjective Changes During Practice; Theme 1)

Self-hypnosis themes - objective attainment

The themes relevant to achieving the program targets in the self-hypnosis component are the following: Practice Context (Theme 3), During Self-Hypnosis (Theme 4), Subjective Changes During Practice (Theme 5) and Optimisation (Theme 6). We believe that this component of the program also achieves the objectives, although it leaves a larger window for optimisation. These objectives are (i) a decrease in pain with self-hypnosis practice, (ii) a decrease in anxiety with self-hypnosis practice and (iii) having developed an independent and beneficial self-hypnosis practice by having integrated the techniques taught.

We observed a (i) decrease in pain during selfhypnosis, as reported in Theme 5. Interestingly, this was also a reason for engaging into the practice of selfhypnosis, per Theme 3. However, in contrast to heterohypnosis, fewer participants mentioned experiencing pain disappearance (3/17 vs 10/17 when comparing Theme 5 and Theme 1). This difference potentially stems from the fact that patients fail to reach the same level of absorption and focus during the hypnotic trance during self-hypnosis compared to hetero-hypnosis.

Our study also confirms that (ii) the practice of selfhypnosis decreases anxiety. Here, participants reported that they experienced feelings of relaxation, with some

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#### The Effect of Hypnosis on the Intensity of Pain and Anxiety in Cancer Patients: A Systematic Review of Controlled Experimental Trials

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Background: Pain is a common symptom in cancer patients. Hypnosis is considered one of the most recognized non-pharmacological techniques in pain management. In oncology, this technique can be used as a complementary treatment to reduce the level of pain and anxiety. The objective of this study is to systematically review and evaluate controlled clinical trials (CCTs) examining the effect of hypnosis on the intensity of pain, and anxiety in

Methods: A systematic review was conducted according to the recommendations of the "Preferred reporting items for systematic reviews and meta-analyses" (PRISMA). The Cochrane systematic review database, the abstract databases, Scopus, PubMed, Google Scholar, and Cochrane Library have been systematically reviewed from 2005 to 2018.

Results: Eleven CCT with a total of 1182 participants met the inclusion criteria and were included in this review. The participants were mainly women (n = 968). Their average age alternates between 48 and 58 years. Perceived pain was measured primarily by visual analog scale (VAS)/numerical pain rating scale (NPRS), which showed that anxiety was measured by Hospital Anxiety and Depression scale (HADS). Hypnosis-related anxiety and pain decreased significantly with respect to usual treatment.

Conclusions: Evidence suggests promising results of hypnosis on the management of pain, and anxiety levels in the vast majority of cancer patients. Therefore, because of the exploratory design and high risk of bias, the effectiveness of hypnosis or hypnotherapy in reducing pain and anxiety levels remains unclear. There is a need for more rigorous randomized controlled trials (RCTs).

#### ARTICLE HISTORY

Received 1 July 2020 Revised 25 June 2021 Accepted 21 October 2021

#### KEY WORDS

Anxiety; cancer; pain; hypnosis; systematic review

#### Background

Cancer is nowadays a leading cause of death in the world. From January to September 2018, there were over 18 million new cancer cases and over 9.6 million cancer-related deaths recorded worldwide (1). Projections estimate that the number of new cancer cases will increase from 12.7 million in 2008 to 21.4 million by 2030, with almost two-thirds of all diagnoses cancer occurring in low and middle-income countries (2).

Pain is one of the most feared and distressing symptoms associated with cancer (3). Indeed, a study conducted at the Pain Assessment and Oncology (INO) in Rabat on (n = 353) cancer terized as having advanced/metastatic/terminal

patients revealed that pain was nociceptive in 89.3% and neuropathic in 10.2% of cases. The numerical scale indicated intense pain with a score above 6.8 (±1.4) for 92.9% in patients (4). Another Portuguese study revealed that out of 371 patients suffering from cancer-related pain 77% had moderate (5-7) or severe (8-11) pain (5). Also, according to a systematic review of the literature on the prevalence of pain in cancer patients, pain prevalence rates were classified into four subgroups: (i) studies including patients after curative treatment, 33% (95% confidence interval [CI], 21-46%); (ii) studies including patients undergoing cancer treatment, 59% (CI Treatment Centre of the National Institute of 44-73%); (iii) studies including patients charac-

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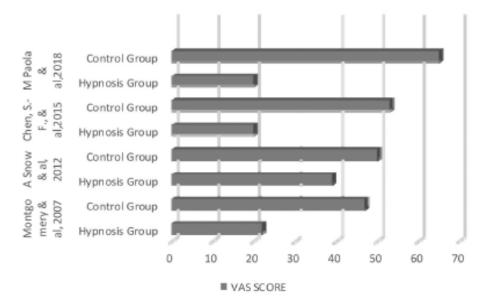


Figure 4. Distribution of patients in the hypnosis and control group according to RCTs whose pain intensity is measured by visual

and treatment time. The results support the position that hypnosis is an effective indication for a wide variety of surgical patients (61).

However, some studies included in this systematic review found a non-significant effect of hypnosis on pain or anxiety compared to the

the clinical level for higher consumption of ketamine and morphine in the PACU for these patients. Patients had a similar need for pain relief analgesia in the PACU in the two groups. Perhaps this is due to the blindness of the

patients to the group to which they were some studies have shown that the intensity of pain does not decrease in the hypnosis group (47.48). it increased slightly in the hypCANCER INVESTIGATION ( 245

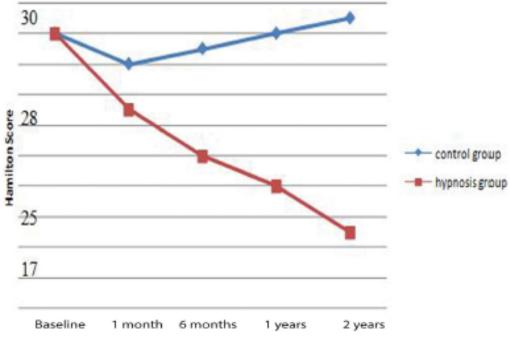


Figure 3. Hamilton anxiety score for the hypnosis group and control group at baseline, at one year and 2 years.

Moreover, HG received significantly fewer (mean 2.00, IQR 1-4) than

(mean 3.00, IQR 1.5-5.0, ents of the EG (mean 3.50, 026). Pain was also signifihypnosis (post-tests: p < .01, g to the results of studies by

odin et al. (51), and Sharma

(52), followed for 2 years, nsity in two groups: standard nosis group depending on the or the HG decreased from eginning to 45.9 ± 13.8 at 1-9 ± 12.4 at 2 years. The VAS ip decreased from 78.5 ± 14.8 ±15.4 at one-year follow-up, 70-year follow-up. Also, the multiplied by 4 to increase sics and opioids in the CG CI: 1.59-12.0) after a 2-year summary of the RCTs of data ty is measured by VAS is

The systematic review of the literature carried out, in the present article about the effect of hypnosis on the intensity of pain and anxiety in cancer patients, highlights the effectiveness of hypnosis since hypnosis interventions have been shown to help reduce anxiety in five of the seven studies examining this variable (47,48,50,52,55). Additionally, for the nine studies using hypnosis to control pain, six of them reported a significant reduction in the intensity of pain experienced by patients (46,49-53). The consistency of these results indicates the usefulness of hypnosis as an effective intervention to help patients control the anxiety and pain associated with both cancer disease and certain medical procedures used in the treatment of cancer patients.

The findings in this review are partly in line with a previous systematic review on hypnosis for heterogeneous cancer populations, which reported positive effects on the intensity of pain and anxiety (60). A meta-analysis on hypnosis in various medical procedures found an overall effect size (ES) of 0.88 (95% CI = 0.57-1.19) in favor of hypnosis, showing that surgical patients in hypnosis treatment groups had better out comes than 80% of nationts in control groups

Integrative Medicine for Pain Management in Oncology: Society for Integrative **Oncology-ASCO Guideline** 

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PURPOSE The aim of this joint guideline is to provide evidence-based recommendations to practicing physicians and other health care providers on integrative approaches to managing pain in patients with cancer.

METHODS The Society for Integrative Oncology and ASCO convened an expert panel of integrative oncology, medical oncology, radiation oncology, surgical oncology, palliative oncology, social sciences, mind-body medicine, nursing, and patient advocacy representatives. The literature search included systematic reviews, meta-analyses, and randomized controlled trials published from 1990 through 2021. Outcomes of interest included pain intensity, symptom relief, and adverse events. Expert panel members used this evidence and informal consensus to develop evidence-based guideline recommendations.

RESULTS The literature search identified 227 relevant studies to inform the evidence base for this guideline. RECOMMENDATIONS Among adult patients, acupuncture should be recommended for aromatase inhibitor-related joint pain. Acupuncture or reflexology or acupressure may be recommended for general cancer pain or musculoskeletal pain. Hypnosis may be recommended to patients who experience procedural pain. Massage may be recommended to patients experiencing pain during palliative or hospice care. These recommendations are based on an intermediate level of evidence, benefit outweighing risk, and with moderate strength of recommendation. The quality of evidence for other mind-body interventions or natural products for pain is either low or inconclusive. There is insufficient or inconclusive evidence to make recommendations for pediatric patients. More research is needed to better characterize the role of integrative medicine interventions in the care of patients with cancer. Additional information is available at https://integrativeonc.org/practice-guidelines/guidelines and www.asco.org/

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survivorship-guidelines.

Pain is one of the most common, disabling, and feared symptoms experienced by patients diagnosed with cancer. 1,2 Among patients with advanced cancer, pain from their cancer treatment that not only negatively can be a result of tumor burden or invasion of bones, muscles, or nerves. In addition, many conventional cancer treatments such as surgery, chemotherapy, radiotherapy, immunotherapy, or hormonal therapy can result in both acute and chronic pain conditions such as aromatase inhibitor (AI)-induced joint pain or importance throughout the cancer care trajectory.

experience remission and join the 16.9 million cancer survivors in the United States alone. 5 Many survivors, however, continue to experience chronic pain resulting affects their quality of life, but also their daily functions. 6 Chronic pain may also lead to nonadherence to oncologic treatment such as hormonal therapies, 7,8 thus, potentially compromising overall survival. Therefore, effective pain management is of critical

chemotherapy-induced peripheral neuropathy (CIPN) As pain in patients and survivors of cancer is com-

TABLE 1. Studies on Interventions With Sufficient Evidence to Inform Recommendations

Intervention	Study Type No.		Pain Symptom Categories	
Adult population				
Acupuncture	SRs	17	Al-related joint pain <sup>27-30</sup> CIPN <sup>31,32</sup> Palliative and survivorship care <sup>33-4</sup>	
	RCTs	34	Al-related joint pain <sup>19,44-47</sup> General cancer pain <sup>20,48-55</sup> CIPN <sup>56-63</sup> Procedural or surgical pain <sup>64-75</sup>	
Yoga	RCTs	4	General cancer pain <sup>76-79</sup>	
Guided imagery and PMR	RCTs	2	Concial cancer pain	
Hypnosis	SRs	2	Procedural pain <sup>82,83</sup>	
	RCTs	8	Procedural pain <sup>84-91</sup>	
Renexology	RCTs	9	General cancer pain*2.38 CIPN*99,100	
Massage	SRs	5ª	General cancer pain <sup>101, 102</sup> Pain during palliative care <sup>33,40,103</sup>	
	RCTs	9	General cancer pain <sup>104,105</sup> Pain during palliative care <sup>21,106-111</sup>	

Abbreviations: Al, aromatase inhibitor; CIPN, chemotherapy-induced peripheral neuropathy; PMR, progressive muscle relaxation; RCT, randomized controlled trial; SR, systematic review.

Some studies overlap between interventions.

			Pain during palliative care
Meditation	RCTs	7	Procedural or surgical pain 127-130 Pain during pulliative core 131-133
Hypnosis	RCTs	4	Pain during palliative care <sup>134-136</sup> Pain during radiation therapy <sup>137</sup>
Reflexology	RCTs	1	Procedural or ourglood painting
Massage	RCTs	4ª	Procedural or surgical pain <sup>69,139-141</sup>
VR therapy	RCTs	2	General cancer pain <sup>142</sup> Surgical pain <sup>143</sup>
Natural products	SRs	4	Oral mucositis <sup>144-147</sup>
Honev	RCTs	19	Oral mucositis <sup>148-166</sup>

ASSOCIATED CONTENT Listen to the podcast with Dr Mao at

Appendix Data Supplement Author affiliations and support

information (if

applicable) appear at the end of this Accepted on July 8, 2022 and published at ascopubs.org/journal/ ico on September 19. 2022: DOI https://doi.

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#### ORIGINAL ARTICLE

#### Virtual reality hypnosis in the management of pain: Selfreported and neurophysiological measures in healthy subjects

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#### Abstract

Background: Virtual reality hypnosis (VRH) has emerged as a new and promising option for pain management. Nonetheless, neural dynamics of pain modulation during VRH have not been investigated yet. The aim of this study was to measure the effects of VRH on pain, combining neurophysiological and selfreported measurements.

Methods: Eighteen healthy subjects underwent noxious electrical stimulations in both normal wakefulness and VRH conditions. Dissociation, absorption, time perception, anxiety, pain intensity and unpleasantness, heart rate variability and breathing were reported for each condition. EEG signals were analysed using event-related potentials (ERP) and time-frequency response (TFR) time-locked to stimuli. Neurophysiological features were correlated with self-reported data.

Results: VRH condition was associated with lower pain and higher dissociation. VRH significantly decreased amplitudes of N100 and P200 ERP components, reduced EEG power between 1 and 5 Hz from 100 to 560 ms, and increased EEG power from 5 to 11 Hz from 340 to 800 ms. These findings were observed at frontal, central and posterior electrodes. Heart rate variability was significantly higher and breathing frequency reduced with VRH. Correlations were found between the self-reported level of pain and ERP components.

Conclusion: VRH modulates cerebral pain processes and body physiology, leading to reduced pain levels. These findings offer a first insight on the analgesic mechanisms of VRH and suggest that VRH is an effective approach to reduce experimental pain.

Floriane Rousseaux and Rajanikant Panda contributed equally to this manuscript

Olivia Gosseries and Audrey Vanhaudenhuyse shares the senior position

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wtleyonltneltbrary.com/journal/ejp Eur J Pain. 2023;27:148-162.



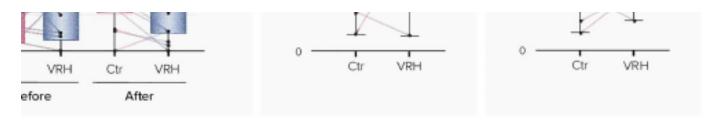
FIGURE I Experimental setup (left) including a VRH system and its software (right). VRH (Oncomfort's aqua®) session starts with (a) an induction phase based on hypnotic techniques, (b) a guidance phase where the subject dives in an underwater world, (c) a deepening phase during which the subject follows a whale during an underwater journey, and (d) a re-alerting phase during which the subject is

#### RESULTS

#### Self-reported data

Pain intensity was significantly lower in the VRH condition compared to the control condition  $(p^{adj} = 0.02)$ . Similarly, pain unpleasantness was lower in the VRH condition compared to the control condition (p = 0.03), but this difference did not reach statistical significance after Bonferroni correction ( $p^{adj} = 0.23$ ). Dissociation was also significantly higher in the VRH compared to the control condition  $(p^{adj} = 0.01)$ . There was no significant difference between conditions for anxiety, absorption and time perception (Figure 2 and Table 1).

In the control condition only, the anxiety increased during the noxious stimulation phase (p = 0.047) even if this difference did not reach statistical significance after Bonferroni correction ( $p^{adj} = 0.094$ ). There was no significant difference in anxiety between pre- and post-session for the VRH condition (Figure 2d and Table 2).



f-reported data results in both control (ctr) and VRH conditions: Pain intensity (a), unpleasantness (b), dissociation (c), tion (e) and time perception (f), using boxplots. Box limits represent 25th to 75th percentiles; line represents median; ninimum and maximum. All individual values are represented by dots.

ology showed that this cluster was localateral frontal, midline and occipital elec-, middle). The increased positive cluster high frequencies (5-11 Hz) and late time ms) after stimulus onset (p = 0.04). The icies correspond to late theta and alpha 12Hz) frequency bands. The positive clusy showed that this cluster was localized , frontal and posterior electrodes were reased at this frequency and time range

#### Results of body physiological data 3.3.1 Heart rate and heart rate variability

Heart rate variability was significantly higher in the VRH condition (137 ±64 ms) compared to control (97 ±10 ms) (p = 0.017) (Figure 5a). Mean heart rate was significantly higher in the VRH condition (60.2 ± 3.2 bpm) compared to the control condition  $(58.3 \pm 2.8 \text{ bpm})$  (p = 0.048). Moreover, heart rate variability significantly decreased following noxious stimulations compared to baseline and

Control condition	2.86±2.71 2.15 [0-9.5]	4.20±2.6 4.80 [0-9.4]	0.047	0.094	-0.55
Virtual reality hypnosis	2.82±2.7 2.65 [0-9.5]	2.9±2.5 2.45 [0-9.5]	0.607	1	-0.04

as statistically significant at the 5% critical level (p < 0.05) (in bold).

Note: Mean ± SD: SD, Standard Deviation; Median (IQR): IQR, Interquartile Range. Adjusted p with Bonferront correction.

was negatively correlated with the ERP component at frontal electrode (r = -0.41, p = 0.027) (Figure 5).

#### Breathing

Breathing frequency was significantly lower in the VRH condition (9.8 ± 1.2 cycles/min) compared to the control condition  $(11.06 \pm 1.16 \text{ cycles/min})$  (p = 0.032). Breathing variability was lower during VRH condition (2.97 ± 1.25) compared to control condition  $(3.51 \pm 2.6)$  (p = 0.044)(Figure 5).

#### 3.4 | Correlation of EEG and body physiological data with self-reported data

The self-reported level of pain intensity was positively correlated with both ERP components at central electrode (rs = 0.40, p = 0.007), and negatively correlated with the control condition, along with a significant reduction in high-frequency power content (6-12 Hz) at the same lo-

was also found between the self-reported level of dissociation and both ERP components measured at frontal electrode (rs = -0.41, p = 0.007), and with the low-frequency (1-6 Hz) power content at both frontal (rs = -0.55, p = 0.010) and parietal (rs = -0.37, p = 0.011) electrodes (Figure 6).

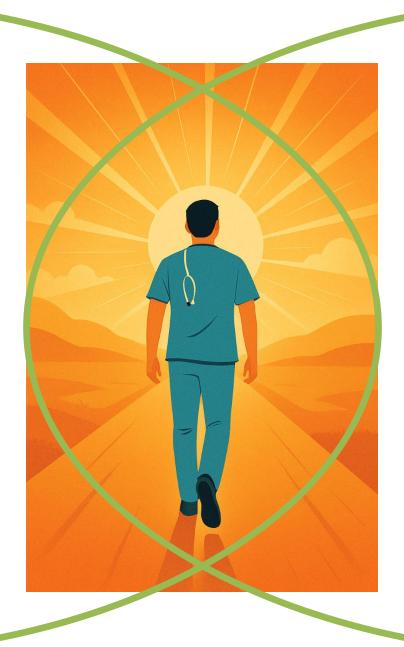
#### 4 DISCUSSION

Studies have shown that virtual reality hypnosis is an innovative non-pharmacological approach that significantly decreases pain perception (Patterson et al., 2004, 2021). However, its analgesic effect has been exclusively demonstrated based on healthcare providers' and patient's reported data and has not been objectivized so far. This is the first study investigating brain responses to painful stimulations with VRH. We observed a significant reduction in pain perception during VRH compared to the cation (rs = -0.49, p = 0.024). A significant correlation duced EEG power between 1 and 5 Hz from 100 to 560 ms

Alcuni studi non hanno dimostrato riduzioni significative dei vari sintomi;	
Riduzione dei costi di farmaci analgesici e ansiolitici, nonché del loro utilizzo per l'assistito;	
Sul dolore e gestione dell'ansia i dati sono sempre più in crescita;	
Rapporto danno-beneficio molto basso;	
Le evidenze sull'efficacia dell'ipnosi in ematologia sono ancora preliminari e limitate;	
Miglioramento della qualità della vita.	

### PROSPETTIVE e PROGETTI FUTURI

Formazione del personale sull'ipnosi con corso blended che prevede 24 ore di formazione, di cui 8 in FAD asincrona e 16 in presenza



Virtual reality hypnosis:
Integrazione del progetto
ipnosi con il programma
«Metacare»

### CONCLUSIONI

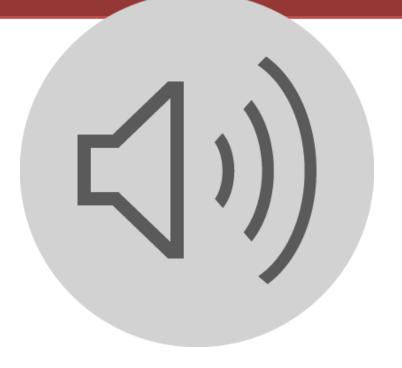
### PUNTI A FAVORE

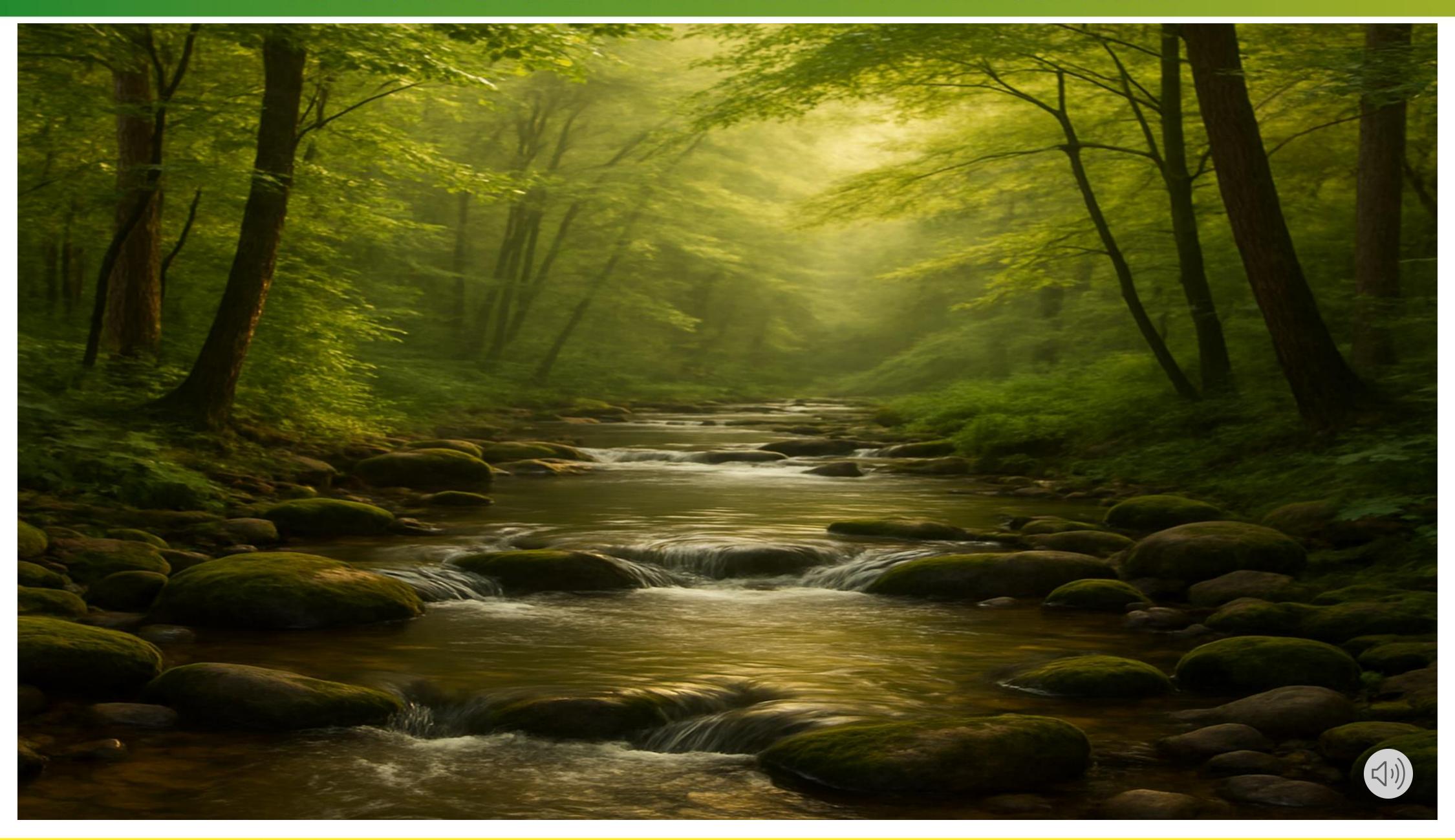
- L'infermiere esperto di comunicazione ipnotica è una figura professionale preziosa in grado di offrire un'assistenza centrata sul paziente e sui suoi bisogni.
- L'ipnosi permette di migliorare la gestione del dolore, dell'ansia, dello stress e contribuisce a una cura più empatica e meno invasiva.
- Diminuzione dell'uso dei farmaci e riduzione dei costi
- Miglioramento della qualità della vita
- Approccio più olistico alla cura della persona

### PUNTI A SFAVORE

- tecnica ancora oggi poco diffusa
- le risorse spesso non consentono di promuovere corsi di specializzazione e progetti formativi
- esiste poca sensibilizzazione nei pazienti al riguardo.

La testimonianza di una paziente affetta da Leucemia Acuta Linfoblastica che è riuscita a controllare l'ansia pre-procedurale e il dolore durante le numerose rachicentesi.







## GRAZIE PER L'ATTENZIONE!

