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Hypnosis, pain, affectivity and quality of life in patients with fibromyalgia: A randomized controlled trial

Hipnosis, dolor, afectividad y calidad de vida en pacientes con fibromialgia: Un ensayo controlado aleatorizado

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ABSTRACT
Objective: This study aimed to evaluate the effect of audio-recorded, self-administered hypnosis as an adjunct to pharmacological treatment of fibromyalgia symptoms. The study focused on the impact of hypnosis on pain intensity, on positive and negative affect, and on the mental and physical health aspects of quality of life, when used as part of the treatment for fibromyalgia. Design: A randomized controlled trial was used. Methods: 97 patients diagnosed with fibromyalgia and receiving pharmacological treatments participated and were randomly divided into a control group and an experimental group. The procedure consisted of listening to the audio in the mornings for 30 days. Results: The self-administered hypnosis intervention produced a decrease in pain intensity in the experimental group; it also impacted the patients' ability to maintain baseline levels of positive affect and mental health-related quality of life, which decreased in the control group; no differences were observed in negative affect or physical health-related quality of life Implications: Hypnosis could complement the work of health professionals in the treatment of patients with fibromyalgia. Conclusions: Overall, the results indicate that self-administered and audio-recorded hypnosis sessions have an impact on mental health-related quality of life, in addition to reducing pain intensity in patients diagnosed with fibromyalgia.
Keywords: anesthetic hypnosis, emotions, mental health, pain, physical health.

RESUMEN
Objetivo: Este estudio tuvo como objetivo evaluar el efecto de la hipnosis autoadministrada y grabada en audio como complemento del tratamiento farmacológico de los síntomas de la fibromialgia. El estudio se centró en el impacto de la hipnosis en la intensidad del dolor, en el afecto positivo y negativo y en los aspectos de salud física y mental de la calidad de vida, cuando se utiliza como parte del tratamiento para la fibromialgia. Diseño: Se utilizó un ensayo controlado aleatorizado. Métodos: Participaron 97 pacientes diagnosticados de fibromialgia que recibían tratamientos farmacológicos, quienes se dividieron aleatoriamente en un grupo de control y un grupo experimental. El procedimiento consistió en escuchar el audio por las mañanas durante 30 días. Resultados: La intervención de hipnosis autoadministrada produjo una disminución en la intensidad del dolor en el grupo experimental; también impactó en la capacidad de los pacientes de mantener niveles base de afecto positivo y calidad de vida relacionada con la salud mental, que disminuyeron en el grupo control; no se observaron diferencias en el afecto negativo ni en la calidad de vida relacionada a la salud física Implicaciones: La hipnosis podría complementar la labor de los profesionales de la salud en el tratamiento de pacientes con fibromialgia. Conclusiones: En general, los resultados indican que las sesiones de hipnosis autoadministradas y grabadas en audio tienen un impacto en la calidad de vida relacionada a la salud mental, además de reducir la intensidad del dolor en pacientes diagnosticados con fibromialgia.
Palabras clave: hipnosis anestésica, emociones, salud mental, dolor, salud física.

Introduction

One of the fundamental aims of integrative medicine is to offer nonpharmacologic therapies that complement conventional treatments, as long as they demonstrate clinical benefits (Prabowo, 2021; van Veen et al., 2024). In the context of fibromyalgia, commonly recommended nonpharmacologic interventions include cognitive-behavioral therapy (CBT), exercise programs, and psychoeducation (Talotta et al., 2017; Häuser et al., 2010; Jones et al., 2007). In addition, emerging approaches such as hypnotherapy have gained prominence, demonstrating effectiveness in reducing pain and associated mental health issues across various health conditions, including fibromyalgia (Rosendahl et al., 2024).

Fibromyalgia is a chronic condition of undetermined etiology, characterized by musculoskeletal pain, predominantly affecting women (Okul et al., 2024). It affects up to 2% of the global population (Macfarlane et al., 2017) and is often accompanied by cognitive disturbances, psychological stress, depression, and anxiety (Rivera et al., 2006; Wolfe et al., 2010). These symptoms can be disabling and significantly impact daily activities (Del Río et al., 2014; Pérez, 2009).

Due to its rising prevalence, unclear etiology, and lack of effective treatments, fibromyalgia has garnered attention from health professionals and researchers (Rivera et al., 2006). Current treatments include antidepressant drugs, cardiovascular exercise, cognitive behavioral therapy, and psychoeducation, which together can be costly and burdensome for patients (Talotta et al., 2017). Therefore, there's a need for affordable and effective new interventions, such as audio-recorded clinical hypnosis, which could offer a low-cost, convenient, and non-invasive treatment option, and aid not only in pain reduction, but also in improved quality of life and presence of positive affect.

Quality of life which encompasses physical, mental, and social health—and positive affect (PA) are key outcomes in fibromyalgia research. It has been observed that quality of life is often reduced in fibromyalgia patients due to chronic pain and related psychological challenges (Rowe et al., 2019). PA refers to feelings of enthusiasm, activity, and alertness, while negative affect (NA) involves subjective distress and unpleasant moods like anger and anxiety (Watson et al., 1988). Prior to intervention, patients with fibromyalgia typically exhibit lower levels of PA, which have been associated with poorer sleep quality and increased fatigue (Zautra et al., 2005; Kohtari et al., 2015).

Hypnosis is a state of focused attention and increased receptivity to suggestions, historically used to modulate pain and emotional responses (Elkins et al., 2015; Wagstaff, 2014). This process can be delivered externally by a hypnotherapist or practiced independently through self-hypnosis. Self-hypnosis, which can be administered via audio recordings, is especially appealing as a low-cost, accessible option for managing chronic conditions. The theoretical rationale for its use in pain management is based on the

modulation of central pain pathways and the alteration of cognitive and affective responses to pain (Jensen & Turk, 2014; Montgomery et al., 2000).

Several studies support the use of hypnosis as a complementary therapy for fibromyalgia, suggesting that self-hypnosis can effectively manage symptoms at low cost (Aravena et al., 2020; Castel et al., 2012; Derbyshire et al., 2017; Martínez et al., 2006; Moioli-Montenegro, 2017; Quirós-Ramírez, 2013; Zech et al., 2017). In particular, audio-based self-administered hypnosis has shown promise in reducing pain and NA while enhancing PA, providing an accessible method for chronic pain management (Pellicer, 2016; Tan et al., 2015; Moioli-Montenegro, 2017).

This research aimed to evaluate a month-long self-administered hypnosis intervention using audio recordings for fibromyalgia patients. The primary goal was to improve health-related quality of life, while the secondary objectives were to reduce pain and NA and enhance PA. It was hypothesized that the intervention would lead to significant improvements in these areas compared to no intervention. The results reported in this study are part of a more extensive research project (Aravena et al., 2020).

Methods

Design

The study consisted of an intergroup, experimental, randomized controlled trial, with pre-test/post-test assessment, following the recommendations of the international CONSORT protocol (Moher et al., 2001). Participating subjects were randomly assigned into two groups: experimental (EG) and control (CG; on the waiting list for the hypnotic procedure). We conducted evaluations at the beginning of the study period, at the end of the one-month intervention period, and six months after the intervention.

Sample

We contacted two support groups in Concepción, Chile, for people with fibromyalgia to recruit participants. The researchers met with group leaders and members, explaining the intervention's nature, objectives, and implications. The sample consisted of 97 patients, with a mean age of 45.70 years (SD = 12.11) and a predominantly female distribution (97.9% in the experimental group and 95.9% in the control group).

Inclusion criteria included being 18 or older and having a fibromyalgia diagnosis from a certified health center. Exclusion criteria were severe psychopathology, terminal organ failure, or other chronic pain diseases. Sample size was calculated using G-Power software (Faul et al., 2007), with an α of 0.05, power of 0.80, and an estimated effect size (f)

of 0.52, based on Sánchez et al. (2019), suggesting a sample size of 47 per group.

The experimental group (EG) had 48 participants, while the control group (CG) had 49 (see figure 1). Randomization was performed by the second author (blinded to participant identities) using patient codes. All participants provided informed consent.

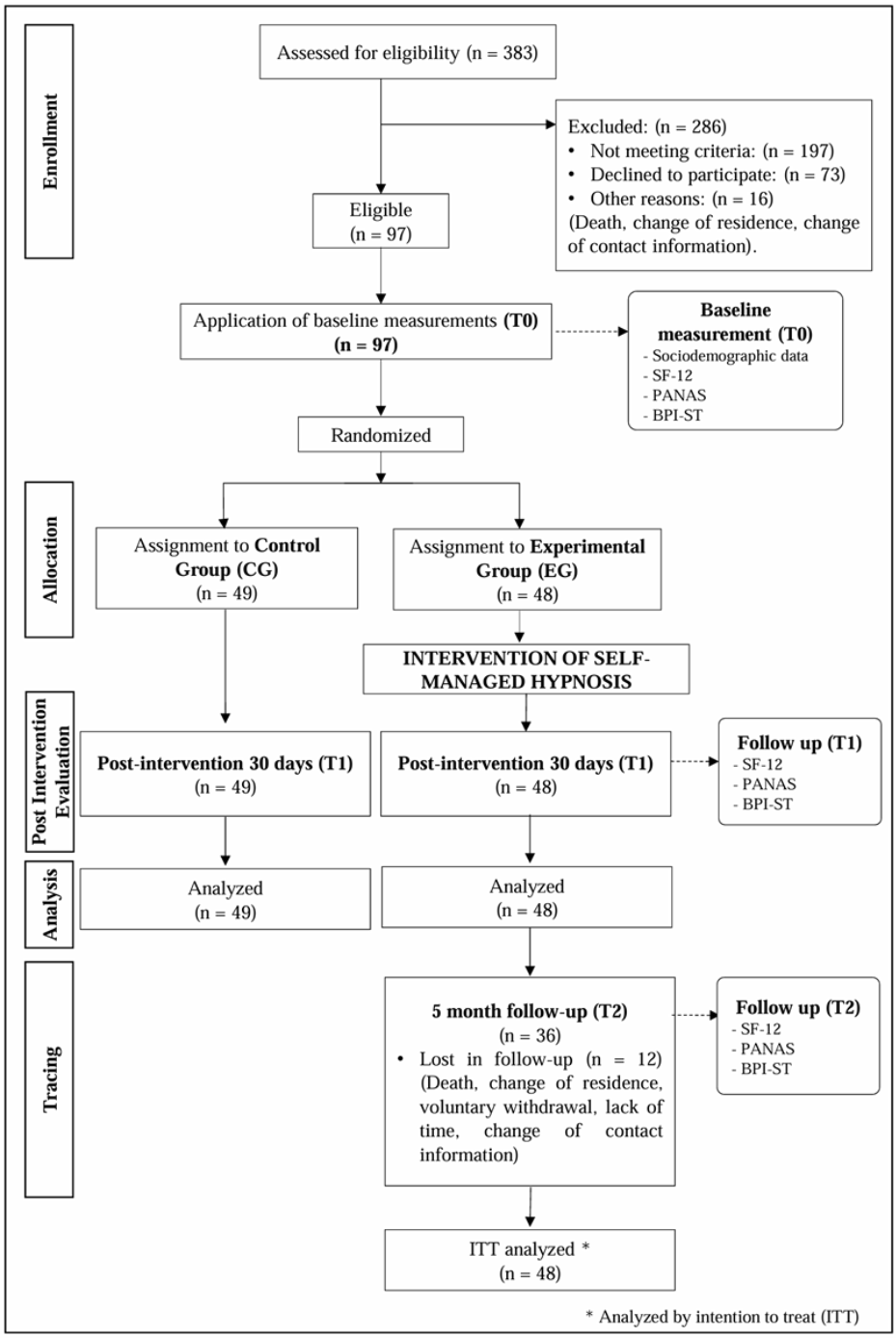

Figure 1:
CONSORT diagram of the study. (Note: SF-12 = Short-Form Health Survey-12; PANAS = Positive Affect and Negative Affect Schedule; BPI-ST = Brief Pain Inventory-Short Form)

Instruments

Intensity of pain

It was measured using item 4 of the Brief Pain Inventory - Short Form (BPI-SF; De Andrés et al., 2015), which reflects the average score of the intensity of pain perceived by patients during the last 24 hours. The BPI-SF is composed of nine (9) items with Likert-type scale answers from zero (0) (No pain/does not interfere with daily life) to ten (10) (As bad as you can imagine/completely interferes with daily life). It assesses the intensity and impact of pain, as well as the effects of analgesic treatment. The instrument has demonstrated high internal consistency, with a Cronbach's alpha of .93. The BPI-SF has been validated in Spanish-speaking populations and widely used in patients with chronic musculoskeletal pain, including fibromyalgia, showing strong psychometric properties across cultures (Badia et al., 2003). Its use in fibromyalgia is supported by multiple studies evaluating pain in this population (Moioli-Montenegro, 2017; Picard et al., 2013; Derbyshire et al., 2017).

Mental and physical dimension of quality of life

We used the 12-item Short- Form Health Survey (SF-12; Jenkinson and Layte, 1997) adapted by Vera-Villarroel et al. (2014) to assess participants' quality of life as degrees of well-being and functional capacity, both in its physical as well as mental dimension. The 12 items are answered on a Likert-type scale from zero to six points. Vera-Villarroel et al (2014) obtained a Cronbach's alpha of 0.63 for the physical dimension and 0.72 for the mental dimension, in addition to evidence of construct validity of criteria. In the subscale of health-related quality of life: mental health, a Cronbach's alpha was obtained, measuring pre = .63, post = .63 and follow-up = .63. While in the physical health subscale, Cronbach's alpha was pre = .79, post = .78 and follow-up = .77.

Positive and negative affect

To examine participants' habitual feelings and emotions, the Positive and Negative Affect Schedule (PANAS) designed by Watson et al. (1988) as adapted by Dufey and Fernández (2012), was employed. It includes subscales of PA and NA, 10 items each. Participants choose a score for each item, ranging from 1 (very slightly or not at all) to 5 (extremely). This instrument has a Cronbach's alpha of 0.89 and 0.88 for PA and NA, respectively, and its construct and criterion validity have been confirmed (Dufey & Fernández, 2012). In the subscale of PA, a Cronbach's alpha was obtained with a measure of pre = .84, post = .77 and follow-up = .75. While in the NA subscale, a Cronbach's alpha was pre = .89, post = .89 and follow-up = .89.

Sociodemographic questionnaire

We created an ad-hoc questionnaire to collect information corresponding to

participants' sex, age, and academic levels as well as clinical and health variables.

Procedure

First, we ran a pilot phase with five volunteers who met the inclusion criteria to obtain feedback regarding the instruments and audios. This allowed us to refine the instructions for the final phase. Next, all participants who had registered for the study up to that point were contacted by phone. Additional participants were recruited by having the support groups invite others through their social media platforms.

Out of 203 people contacted, 106 were excluded: 81 had terminal organ failure or another conditions, 15 people could not be located, 5 people did not have a document issued by a professional certifying the diagnosis of fibromyalgia, and 5 had severe psychopathology diagnosed by a specialist. Finally, 97 people participated in the study.

Meetings were then organized in which the characteristics of the study were explained, including the signing of the informed consent. The consent form indicated that participation was voluntary and that the information would be handled confidentially and would be kept by the first author of the study. To preserve anonymity, each patient was assigned a code with which their information was entered into a database.

They were also informed that, based on the evidence, this procedure should not pose any risk, discomfort or inconvenience to them; otherwise, they could contact the research team, who would be available to answer any questions or doubts. During the application, no adverse events were recorded. This was included as part of the ethical monitoring of the study.

After this, the instrument set for the basal measurement (T0, baseline) was applied. Both measuring instruments were applied to the participants in person, for which they were summoned individually at a place and time agreed upon by both parties.

In addition to the baseline (T0) and immediate post-intervention (T1, Time 1) assessments, a follow-up measurement (T2, Time 2) was conducted five months after the intervention. The purpose of T2 was to evaluate the long-term sustainability of the treatment effects on pain, quality of life, and affect, and to determine whether the improvements observed at T1 were maintained over time, and 6 months later a third follow-up measurement was applied to EG (T2; See figure 1).

Intervention

Each participant in the experimental group received two audio recordings. The first was a 12-minute session focused on induction to hypnosis. It included a calm voice guiding the listener through focused attention, imagery, dissociation, and the experimentation of

ideodynamic phenomena (Cuadros & Vargas, 2009), aiming to reduce misconceptions and negative expectations about hypnosis (Alden & Heap, 1998).

The second recording lasted 14 minutes and was designed for self-hypnosis practice. It reinforced the experience of the first session using suggestions related to physical and emotional relief from fibromyalgia-related symptoms (Moioli-Montenegro, 2017; Picard et al., 2013). Examples of suggestions include: "...with each breath, your body and mind feel lighter and more balanced..." or "...your unconscious mind knows how to create relief and well-being in a gentle and natural way...".

The scripts were prepared by the authors, with a clinical psychologist specializing in hypnosis providing the voice. Transcripts are available upon request from the corresponding author.

Although these recordings have not been formally validated by external judges, they were developed based on established theoretical frameworks of hypnosis (e.g., Cuadros & Vargas, 2009; Moioli-Montenegro, 2017) and underwent pilot testing for feasibility and acceptability. The first recording includes a clear induction procedure designed to facilitate a trance state, while the second features specific suggestions aimed at reducing pain and stress.

The decision to use only two recordings ensured accessibility and treatment adherence, as extensive interventions might reduce participants' motivation. Previous studies indicated that brief self-administered hypnosis interventions could significantly impact pain perception and well-being (Moioli-Montenegro, 2017; Picard et al., 2013).

Both the EG and CG continued their usual fibromyalgia treatments during the intervention. Usual treatments included pharmacological, physical, psychological, and alternative therapies.

This study received ethical approval from the Ethics, Bioethics and Biosafety Committee of the Vice-Rectory for Research and Development, University of Concepción, Chile (resolution CEBB 446-2019).

Data Analysis

The questionnaire responses were analyzed using SPSS 23 (IBM Corp., 2015). To analyze variables regardless of intervention adherence, an "intention to treat" approach was used, including both those who completed and those who abandoned treatment, ensuring no loss of measurement data for either the experimental group (EG) or control group (CG) (Devereaux et al., 2002).

Firstly, descriptive analyses of sociodemographic and psychosocial variables for each

group were conducted, providing averages, standard deviations, maximum and minimum scores, and instrument reliability. Secondly, normal distribution analyses using the Kolmogorov-Smirnov test were performed.

To test the hypotheses, a 2x2 mixed ANOVA comparison was carried out with Bonferroni adjustment as a post hoc test, considering an intergroup comparison between the EG and the CG and an intragroup comparison between the pre-intervention and the post-intervention.

To compare the intragroup measurements in the EG between the pre-intervention, post-intervention and follow-up, repeated measures ANOVA with Bonferroni adjustment was used as a post hoc test. No follow-up data were collected for the control group (CG) due to ethical considerations, as they were on a waiting list and accessed the audio recordings once the intervention in the EG had been completed.

In both cases, the effect size was calculated using the partial eta squared (ηp2) where a value of 0.01 implies a small effect, a value of around 0.06 indicates a medium effect and a value greater than 0.14 is a large effect. (Téllez et al., 2015).

Results

The present study included 97 patients diagnosed with fibromyalgia, randomly divided into two groups.

The data obtained in the pre-intervention assessment allowed us to observe equivalence in demographic characteristics and clinical variables between the EG and the CG, confirming the correct randomization of the sample (see Table 1).

To further underscore baseline equivalence, a detailed comparison of pre-intervention data revealed no statistically significant differences between the groups regarding age, gender distribution, educational level, and clinical variables. For instance, the experimental group (EG) had a mean age of 45.70 (*SD* = 12.11) and the control group (CG) had a mean age of 45.33 (*SD* = 10.79), with similar distributions in other demographic and clinical measures ($p > .05$ in all cases). Both the SG (97.9%) and the CG (95.9%) had a higher proportion of women than men. This narrative summary confirms that both groups started the study under equivalent conditions. These and other sociodemographic and clinical characteristics are presented in Table 1. This narrative summary confirms that both groups began the study under equivalent conditions.

According to the analysis of the participants' self-reported data regarding adherence, the mean number of days on which patients self-administered the intervention was 24.60 (*SD* = 4.19) out of a maximum of 30.

Table 1
Pre-Study Sociodemographic Characteristics of the Participants

Results		EG (n = 48)	CG (n = 49)	*p*-value
Age (years)		M = 45.79; SD = 12.11	M= 45.33; SD=10.79	.84
Sex				.57
	Female	47 (97.9 %)	47 (95.9%)	
	Male	1 (2.1%)	2 (4.1%)	
Educational Level				.83
	Elementary School	2 (4.2%)	1 (2.0%)	
	High School	20 (41.7%)	20 (40.8%)	
	Bachelor's degree	14 (29.2%)	20 (40.8%)	
	Technician	12 (25.0%)	8 (16.3%)	
First symptoms (years ago)		M = 12.71; SD = 12.37	M = 10.16; SD = 6.70	.21
Diagnosis (years ago)		M = 4.83; SD = 4.18	M = 4.41; SD = 3.70	.60
Specialist				.33
	General Physician	8 (16.7%)	8 (16.3%)	
	Rheumatologist	31 (64.6%)	26 (53.1%)	
	Traumatologist	4 (8.3%)	8 (16.3%)	
	Neurologist	2 (4.2%)	4 (8.2%)	
	Family doctor	2 (4.2%)	0 (0%)	
	Internal Medicine	1 (2.1%)	1 (2.0%)	
	Psychiatrist	0 (0%)	2 (4.2%)	

Table 2 shows the means, standard deviations, *F*-value, *p*-value and effect size for each variable evaluated in both groups, both in the pre-intervention and post-intervention evaluations.

In pain intensity, significant time x group effects are observed, as well as significant intragroup ($F = 14.585$; $p < .001$; $\eta p2 = 0.133$) and intergroup ($F = 6.242$; $p < .001$; $\eta p2 = 0.062$) effects. A significant reduction in pain intensity is observed in the experimental group between the pre- and post-intervention stages, and a lower pain intensity is observed in the experimental group than in the control group in the post-intervention stage. In a complementary descriptive analysis, considering that the scale used (BPI) has a cutoff point of 7 points or more for severe pain, we observed that 27.01% (n = 13) of participants in the EG and 38.8% ($n = 19$) in the CG reported severe pain in the pre-intervention condition, while in the post-intervention period this level was reduced to 8.3% in the EG, while in the CG it was 32.7%. To further examine these changes, a chi-square test was conducted to compare the proportions of participants reporting severe pain before and after the intervention in each group. In the experimental group, the difference was statistically significant, $\chi^2(1) = 4.57$, $p = .032$, indicating a reduction in the number of participants experiencing severe pain after the intervention. In contrast, no significant change was observed in the control group, $\chi^2(1) = 0.18$, $p = .673$.

In PA, there is no significant effect of time x group. The evidence indicates that there

is an intergroup effect in which, in the post-intervention, the PA scores in the experimental group are significantly higher than the score in the control group ($F = 4.351$; $p = .040$; $\eta p2 = 0.068$).

In mental dimension of quality of life, a significant time x group effect is observed, as well as intragroup effects ($F = 6.914351$; $p = .010$; $\eta p2 = 0.044$). In the post-intervention, a significant decrease in the score between the pre- and post-intervention is observed in the CG, whereas the scores in the EG are maintained.

In NA and in physical dimension, there is no significant effect of time x group, nor are intragroup or intergroup effects observed.

Table 2

Comparison between the experimental group (n = 48) and control (n = 49) in pre- and post-intervention: mean, standard deviation, and effect size of the intervention (η_p^2), using ANOVA 2x2.

Variable	Time	EG	CG	η_p^2	*F*-value	*p*-value
		M (SD)	*M (SD)*			
Pain intensity	Pre	5.69 (1.63)	5.92 (1.43)			
	Post	4.75 (1.54)	5.92 (1.43)	0.133	14.585	<.001
Negative affect	Pre	25.81 (9.18)	27.00 (8.66)			
	Post	25.83 (9.98)	27.84 (8.34)	0.003	0,271	.604
Positive affect	Pre	24.73 (7.17)	22.76 (6.66)			
	Post	25.33 (6.72)	22.20 (6.58)	0.009	0.827	.365
HRQL: Mental dimension	Pre	15.64 (3.70)	15.57 (3.94)			
	Post	15.58 (2.73)	13.96 (2.94)	0.059	5.920	.017
HRQL: Physical dimension	Pre	13.08 (1.16)	13.35 (1.38)			
	Post	13.29 (1.35)	13.20 (5.42)	0.019	1.845	.177

Note: HRQL = Health-related quality of life; contrast (*F* value); significance (*p* value)

In the follow-up assessments (T2) for the experimental group (EG), the intragroup analysis (see Table 3) highlighted a significant reduction in pain intensity over time, $F(2, 94) = 9.363$, $p = .001$, $\eta p^2 = 0.289$. However, no significant changes were observed in PA, $F(2, 94) = 0.886$, $p = .419$, $\eta p^2 = 0.037$, not in NA, $F(2, 94) = 2.596$, $p = .101$, $\eta p^2 = 0.101$. For mental health-related quality of life, significant changes were observed over time, $F(2, 94) = 3.807$, $p = .030$, $\eta p^2 = 0.142$, while no significant changes were found in physical health-related quality of life, $F(2, 94) = 0.750$, $p = .478$, $\eta p^2 = 0.032$.

Table 3
Statistics of EG Intragroup comparison between the pre-intervention, post-intervention and follow-up evaluation, through the ANOVA of repeated measures (n = 48).

Variable	Time	*M*	*SD*	*ηp2*	*F value*	*p-value*
Pain intensity	Pre	6.07	0.24	0.289	9.363	.001
	Post	5.20	0.26			
	Follow-up	5.40	0.22			
Negative affect	Pre	25.81	9.18	0.101	2.596	.101
	Post	25.83	9.98			
	Follow-up	26.81	7.72			
Positive affect	Pre	24.73	7.17	0.037	0.886	.419
	Post	25.33	6.72			
	Follow-up	25.52	5.34			
HRQL: Mental health	Pre	15.65	3.70	0.142	3.807	.030
	Post	15.58	2.73			
	Follow-up	14.79	2.13			
HRQL: Physical health	Pre	13.08	1.16	0.032	0.750	.478
	Post	13.29	1.35			
	Follow-up	13.17	1.34			

Notes: HRQL = Health-related quality of life; effect size (*ηp2*); contrast (*F*-value); significance (pv-alue)

Discussion

The study aimed to evaluate the effects of a self-administered hypnosis intervention on pain intensity, PA, NA, and health-related quality of life (mental and physical dimensions) in fibromyalgia patients. The results showed statistically significant effects on the reduction of pain intensity and improvements in mental health-related quality of life.

The decrease in pain intensity in the experimental group aligns with findings from other studies on fibromyalgia and hypnotic analgesia (Bernardy et al., 2011; Derbyshire et al., 2017; Moioli-Montenegro, 2017; Montgomery et al., 2000; Zech et al., 2016). Hypnotic analgesia is suggested to increase pain thresholds and decrease perceived pain intensity (Potié et al., 2016).

Although no statistically significant differences in PA were observed between groups, it is possible that the hypnotic suggestions employed in the intervention were not specific

enough to immediately influence participants' positive emotions, despite the inclusion of emotional components in these suggestions. The literature indicates that the hypnotic response strongly depends on the type, specificity, and emotional content of the suggestions used (Dillworth & Jensen, 2010; Schmidt et al., 2022). Future interventions could benefit from refining the specificity of the emotional content in the suggestions to better assess their impact on both positive and negative affect.

Likewise, no significant changes were observed in negative affect following the intervention, and no statistically significant differences were detected between the experimental (EG) and control groups (CG). This finding suggests that, although reductions in pain intensity might positively influence other aspects, such as quality of life, they do not necessarily translate into immediate changes in negative emotional responses. These results should be interpreted cautiously, as the relationship between pain reduction and changes in positive and negative affect is complex and may be influenced by multiple factors inherent to the chronic nature of fibromyalgia. It is important to note that the hypnotic intervention does not provide a curative treatment for fibromyalgia, as no curative therapy currently exists (Jurado-Priego et al., 2024). Consequently, patients continue to face daily challenges that may sustain their levels of negative affect (Rivera et al., 2006).

Regarding health-related quality of life, no significant change was observed in the physical health dimension. However, significant differences were found in the mental health dimension between the EG and CG, suggesting that the intervention might have partially slowed or halted the typical deterioration in this area among fibromyalgia patients. This positive effect on mental health-related quality of life might be associated with the parallel reduction of pain, fatigue, and depressive symptoms, factors directly influencing the quality of life in this population (Del Río et al., 2014).

Although statistically significant improvements were observed, it is important to interpret these findings with a realistic perspective regarding their clinical relevance. Despite the large effect sizes on pain intensity and mental health, the clinical impact may be more limited. In some comparisons, the absence of change in the experimental group contrasted with deterioration in the control group, which may indicate only a probable protective effect rather than a robust therapeutic benefit. Given the methodological limitations—such as the lack of an active control condition and potential placebo influences—these results should be regarded as preliminary, supporting the intervention as a complementary treatment rather than a stand-alone solution.

This study involved 30 sessions of self-administered hypnosis, exceeding the minimum used in chronic pain protocols, which range from 4 to 44 sessions (Jensen & Patterson, 2006). Specific fibromyalgia studies with fewer sessions also reported positive results. Tan et al. (2015) combined two face-to-face sessions with 8 weeks of daily practice; Moioli-Montenegro (2017) used 4 group sessions and daily self-hypnosis for one month; and

Castel et al. (2012) conducted 14 weekly CBT with hypnosis sessions, achieving significant improvements. The development of a low-cost, easy-to-implement, self-administered procedure with auspicious results is the main contribution of the present study to the work of health professionals.

The first limitation of the study is the small number of male participants, which prevented the assessment of sex differences in the effects of the self-administered hypnotic intervention. However, this sample structure reflects the higher prevalence of fibromyalgia in women, who are diagnosed nine times more than men in Chile and internationally (Katz et al., 2010; MINSAL, 2016).

Second, although participants were instructed to maintain their usual treatments, the frequency of medication use was not recorded. This limitation could have influenced the results and hindered the isolated effect interpretation of the hypnotic intervention. Future studies should include detailed medication use records to avoid this bias.

Third, participants were aware of the intervention they received, as they were administered audio-recorded inductions. This lack of blinding may have influenced the positive results in the EG.

The control group choice also represents a limitation. Including a placebo group with neutral relaxation audios would have better isolated the specific effects of hypnosis from general relaxation or audio listening effects, allowing a more accurate assessment of hypnotic techniques.

A fifth limitation is the lack of follow-up for 5 months (T2) for the CG, due to ethical considerations that consider it inappropriate to leave people who are suffering without intervention for a prolonged period. This limits the comparison of long-term outcomes but upholds the ethical commitment to offer beneficial interventions. We acknowledge that further external validation of these recordings is desirable. Future research could explore alternative designs balancing ethical considerations with methodological rigor.

Lastly, study participants were individuals from self-support groups, which somewhat limits the generalizability of the results.

For future studies, it is recommended to evaluate additional variables common to fibromyalgia, such as catastrophic thinking, sleep disturbances, and anxiety. Assessing the efficacy of this intervention over a longer period could determine its suitability as a permanent treatment for chronic fibromyalgia. Assigning an alternative audio to the control group (CG) would help isolate the effects of hypnosis from those of general audio listening. Comparing this intervention with cognitive-behavioral therapy, which has shown favorable results in reducing pain and insomnia, is also suggested (Jami et al., 2017; McCrae et al., 2019). Documenting challenges faced by practitioners implementing such interventions

could offer insights for improving and replicating similar studies. Incorporating physical measurements, like vitamin D levels, alongside self-reports would provide additional information about intervention effects (Gheita et al., 2016; Karras et al., 2016).

Implications for practice

The study highlights the effectiveness of self-administered hypnosis in managing pain and improving mental health-related quality of life in fibromyalgia patients. This intervention could complement conventional treatments, especially in resource-limited settings, and reduce the care burden and associated costs (Pellicer, 2016). Promoting patient autonomy, it allows symptom management outside the clinical setting and should be part of an interdisciplinary approach.

VandeVusse et al. (2010) suggest several actions to incorporate the use of hypnosis in professional work. For example, by recommending hypnosis as an additional technique among others available when counseling people on possible strategies to improve their quality of life. They can also facilitate patients' access to prerecorded self-hypnosis tapes. In addition, they can tailor their work to meet the individual needs of people who have opted for hypnosis, resulting in quality care. Dumain et al. (2022) suggests on the other hand that hypnosis training of healthcare workers may lead to better pain management and avoid an increase in pain-related mental health problems. Combining hypnosis with pain education strategies may improve the outcome of care (Rizzo et al., 2018).

Conclusions

It can be concluded that the intervention effectively managed the psychological distress caused by fibromyalgia, preventing deterioration of mental health-related quality of life and decreasing perceived pain. An audio-recorded, self-administered hypnosis procedure demonstrating these results could significantly benefit health professionals as an adjunctive treatment for assisting individuals diagnosed with fibromyalgia.

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