EFFECTS OF MEDICINAL BIOMAGNETISM AND DEMAG ON SEVERE DEPRESSION: A MIXED STUDY CONDUCTED IN A CAPS II

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Abstract: Depression is a prevalent mental disorder invariably accompanied by emotional and physical impairments, as well as limitations in conventional treatment. This study investigated the effects of Magnetic Integrative and Complementary Practices (PICMAG), specifically Medical Biomagnetism (BM) and Magnetic Emotional Dispersion (DEMAG), in managing severe and persistent depression in patients treated at a Psychosocial Care Center (CAPS) within the Brazilian Unified Health System (SUS). The research adopted a mixed-methods approach, combining quantitative and qualitative analyses, involving three participants who underwent eight therapeutic sessions over four weeks. The impact of the interventions was assessed through the WHOQOL-BREF questionnaire and semistructured interviews. The results indicated a significant improvement in the physical, psychological, and social domains, with a reduction in depressive symptoms, increased vitality, improved sleep quality, and strengthened social interactions, along with notable gains in self-esteem and mood. Qualitative reports reinforced these findings, highlighting emotional relief and the reframing of negative behavioral patterns. Additionally, biomagnetic pairs and destructive mental, behavioral, and attitudinal states (ECADs) were identified suggesting a link between bioenergetic imbalances and depressive symptoms. The analysis suggests that BM and DEMAG may modulate neurochemical and inflammatory activity, promoting emotional stability and symptom relief. Despite limitations such as the small sample size and the absence of a control group, the results point to the potential of these

ISSN: 2763-5724 / Vol. 05 - n 03 - ano 2025



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techniques as complementary approaches in mental health care. Future studies with larger samples and neurochemical biomarker monitoring may contribute to validating the efficacy of PICMAG and supporting its incorporation into the Psychosocial Care Network (RAPS) of SUS.

Keywords: Depression; Mental Health; Quality of Life; Integrative and Complementary Practices; PICMAG; Medical Biomagnetism; Biomagnetic Pair; DEMAG; Magnets; Static Magnetic Fields.

INTRODUCTION

Depression is one of the leading causes of disability in the world, affecting approximately 280 million people, which corresponds to about 5% of the global adult population (WHO, 2023). It is characterized by a persistent state of depressed mood, anhedonia, and neurovegetative changes, which significantly impact the individual's functionality (Dalgalarrondo, 2019; Silva, 2016; Tatossian, 2016; Gonçalves et al., 2018). Its pathophysiology involves a complex interaction between genetic, neurochemical, and environmental factors, highlighting the dysregulation of the hypothalamic-pituitary-adrenal axis, systemic inflammation, and alterations in serotonergic, dopaminergic, and noradrenergic neurotransmission, directly impacting the regulation of mood, motivation, pleasure, attention, and emotional response (Zajkowska et al., 2022; Iyer et al., 2024).

In the epidemiological context, the prevalence of depression varies according to sociodemographic factors and associated comorbidities. It is estimated that women are more susceptible to the disorder than men, with a 50% higher incidence among women (WHO, 2023). In addition, approximately 10% of women in the gestational period or in the puerperium are affected by the condition, evidencing the vulnerability of this group (Woody et al., 2017). The impact of depression is not restricted to mental health, but is also associated with chronic pain related to cardiovascular and metabolic diseases, such as diabetes, enhancing its morbidity and making the clinical management of these patients difficult (Paiva et al., 2024; Aaron et al., 2025).

The treatment of depression includes both pharmacological and non-pharmacological



approaches. Selective serotonin reuptake inhibitors (SSRIs) and serotonin norepinephrine reuptake inhibitors (SNRIs) are widely used, however, approximately 30% of patients are resistant to treatment (WHO, 2023). Cognitive-behavioral therapy (CBT) and interpersonal psychotherapy demonstrate efficacy in modulating emotional response, helping in cognitive restructuring and in the development of adaptive coping strategies (Atta; El-Ashry; Mousa, 2024). However, the gap in access to specialized treatments persists as a global challenge, with more than 75% of individuals in low- and middle-income countries lacking access to adequate care (WHO, 2023).

Given the limitations of conventional treatments, complementary and integrative therapies have been widely studied as alternatives for modulating mood and improving the quality of life of patients with depression (Mendes et al., 2019; WHO, 2023; Atta; El-Ashry; Mousa, 2024). Among these approaches, Integrative and Complementary Magnetic Practices (PICMAG) stand out, such as Medicinal Biomagnetism (BM) and Magnetic Emotional Dispersion (DEMAG), low-cost, noninvasive techniques that use magnetic and bioenergetic fields to restore the balance of the body's energy flows (Bossa et al., 2023; Rambo Martini et al., 2024; Felismino, 2019; Felismino, 2021).

Studies indicate that static magnetic fields, used in BM, can influence biophysiological processes at the cellular level by modulating intracellular signaling pathways and interacting with charged molecules such as membrane receptor proteins and ion channels. In addition, these interactions modulate immune activity and inflammatory pathways, directly interfering with pain perception and neurobiological processes, which can contribute to improved mood and depressive symptoms (Fan et al., 2021; Palaikis et al., 2023; Pavanello et al., 2023; Vasconcellos et al., 2023; Cintra et al., 2023; Pereira et al., 2023; Lima et al., 2023; Santos et al., 2023; Cazella et al., 2023; Oliveira et al., 2024; Yang et al., 2022; Wang et al., 2024).

Integrative and Complementary Health Practices (ICPs), which act on the body-mind axis using bioenergetic tools, have been associated with benefits in the treatment of various pathologies, positively impacting the quality of life and psychological well-being of patients (Lima, 2009; Hsieh; Chiu; Wang, 2013; Kanherkar et al., 2017; Kaliman, 2018; Polrola et al., 2018; Nelson, 2019; Pelissari;

ISSN: 2763-5724 / Vol. 05 - n 03 - ano 2025



Bossa, 2023). Recent research has explored the effects of PICS on the management of depression, including acupuncture, mindfulness, physical activity, and bioenergetics (Belasco; Passinho; Vieira, 2019). Mindfulness-based techniques have shown a positive impact on reducing self-rumination and expressive suppression, promoting improved emotional regulation and psychological resilience (Atta; El-Ashry; Mousa, 2024). Acupuncture has been associated with the modulation of neurotransmitters and the reduction of cortisol levels, contributing to the relief of depressive symptoms (Belasco; Passinho; Vieira, 2019).

Thus, PICMAG, such as DEMAG, which act on the body-mind axis and on the emotional energy field, present themselves as a therapeutic option for positive stimulation of neural plasticity and reduction of systemic inflammation levels, essential factors in the pathophysiology of depression. The growing acceptance of these practices and their incorporation into health systems indicate an advance in the search for more accessible and less invasive therapeutic alternatives, especially for vulnerable populations (Sousa; Guimarães; Gallego-Perez, 2021; WHO, 2023).

In view of this scenario, the present study aims to evaluate the effects of PICMAG such as BM and DEMAG on mental health, investigating their impact on depression symptoms. The research aims to provide a scientific basis for the inclusion of these PICMAG as a complementary therapeutic approach for mental disorders, contributing to the advancement of mental health care strategies.

MATERIALS AND METHODS

This study was conducted at the São Lourenço Mártir Psychosocial Care Center II (CAPS II), located in the municipality of São Lourenço da Mata, in the state of Pernambuco. The CAPS is a public service of the Psychosocial Care Network (RAPS) of the Unified Health System (SUS), specialized in the treatment of severe and persistent mental disorders. The choice of this environment made it possible to carry out the interventions in a structured clinical context, with monitoring by the multidisciplinary team and within the guidelines of public mental health policies in Brazil.



The research adopted a mixed methodological approach, combining qualitative, quantitative, and field methods to analyze the impacts of the proposed interventions. The sample consisted of three participants diagnosed with severe depression, all of whom were monitored by a psychiatric and psychological team at the specialized mental health unit. The inclusion criterion required that the participants had a confirmed diagnosis for at least one year and were under continuous treatment in a public mental health service. Participants with contraindications to the use of the proposed interventions, such as carriers of implantable electronic devices, such as pacemakers, due to the interaction with the magnetic fields used in Medicinal Biomagnetism, were excluded from the study.

The participants were aged between 42 and 47 years old and had a diagnosis of severe depression, with psychotic symptoms, including delusions and/or hallucinations. All of them had a history of suicide attempts and reported experiences of psychological and sexual violence, both intrafamily and extrafamily. In addition, significant family conflicts were identified that contributed to the development and maintenance of the clinical picture.

The selection of participants was carried out with the intermediation of the CAPS technical team, which analyzed the medical records and identified potential volunteers. After initial contact and detailed explanation of the research objectives and the procedures involved, the Informed Consent Form (ICF) was signed, guaranteeing voluntary participation and confidentiality of the data. On the same day, individual interviews were applied to collect sociodemographic information, clinical history and experience with conventional treatments.

The participants underwent treatment with Medicinal Biomagnetism (BM) and Magnetic Emotional Dispersion (DEMAG), with two sessions per week, for one month, totaling eight sessions of one hour each. Data collection took place between January 14 and February 22, 2022.

As a quantitative tool, the WHOQOL-BREF questionnaire, developed by the World Health Organization (WHO), was used to assess the quality of life in different populations. The instrument measures four main domains: physical, psychological, social, and environmental (WHOQOL Group, 1998; Fleck et al., 2000; Skevington; Lotfy; O'Connell, 2004). Its Brazilian version has been validated



and has adequate psychometric properties for measuring quality of life in the adult population (Fleck et al., 2000). The questionnaire was applied before and after the intervention, allowing the comparison of the results obtained.

The research investigated the effects of two Integrative and Complementary Magnetic Practices (PICMAG), BM and DEMAG, applied as complementary strategies to conventional treatments. The BM protocol followed the guidelines established in Felismino's Biomagnetism and Bioenergetics Course (2019), with a structured application based on the biomagnetic screening and semiology protocol proposed by Corrêa et al. (2023). To increase the accuracy of the bioenergetic analysis, BM level 2 tracking was used, as described by Cossenza et al. (2023), which allows an indepth assessment of the interaction between biomagnetic pairs and emotional and systemic factors.

The interventions took place over four weeks, totaling eight therapeutic sessions, with a frequency of twice a week. Each session lasted approximately one hour and was held in a reserved room within the CAPS, ensuring an adequate and safe environment. During the sessions, the participants remained lying down while the unbalanced biomagnetic pairs were identified. The magnets were applied to the identified points according to the needs of each research participant.

DEMAG was applied in a complementary way to the BM, with the objective of neutralizing negative emotional patterns that were perpetuating the participants' psychic suffering. DEMAG is an integrative technique created in 2016 by therapists Hérica Felismino and Cláudio Peroba, based on the studies of Dr. Bradley Nelson (2007), with the objective of treating destructive emotional content that impacts the physical, mental, emotional and behavioral aspects of the individual. These contents, called ECADs (destructive mental states, behaviors and attitudes), are identified through muscle testing and treated with verbal commands and therapeutic intention, promoting the release of energetic blockages that sustain psychic illness. In addition, the technique involved the activation of mental states, behaviors, and constructive attitudes of ECACs, with the aim of strengthening internal structures and favoring more positive perceptions of life. The protocol followed the guidelines established in the Specialization Course in Biomagnetism and Bioenergetics by Felismino and Peroba



(2019), complementing the techniques described in the Advanced DEMAG Online Course (2021). The application occurred after the identification of the main biomagnetic pairs and identification and transmutation involved specific verbal commands aimed at reframing dysfunctional emotional memories.

Data analysis combined qualitative and quantitative approaches to broaden the understanding of the effects of the interventions. Qualitative data were extracted from semi-structured interviews, transcribed and analyzed using the Content Analysis methodology described by Bardin (1977, 2011), widely recognized in qualitative research for the identification of thematic patterns. The participants' statements were categorized into thematic axes, allowing the identification of patterns in the reports on the experiences with conventional treatments and with the PICMAG applied.

Quantitative data were analyzed based on the WHOQOL-BREF scores, enabling the objective measurement of the impact of the interventions on quality of life. The tabulation and statistical analysis of the data were performed in Microsoft Excel, following the methodology adapted from Pedroso et al. (2010).

The research followed all the ethical guidelines established for studies with human beings. The project was approved by the Research Ethics Committee of Faculdade Integradas de Patos (FIP), under opinion number 6,000,760, ensuring compliance with the regulations of the National Health Council (Resolution No. 466/12). The anonymity of the participants was ensured at all stages of the research, and the information collected was used exclusively for scientific purposes.

FINDINGS

The results obtained with the application of Integrative and Complementary Magnetic Practices (PICMAG), Medicinal Biomagnetism (BM) and Magnetic Emotional Dispersion (DEMAG) were analyzed based on quantitative data extracted from the WHOQOL-BREF questionnaire and qualitative data obtained through semi-structured interviews. Additionally, a survey of biomagnetic

ISSN: 2763-5724 / Vol. 05 - n 03 - ano 2025



pairs and mental states, behaviors and destructive attitudes (ECADs) common among the participants was carried out, allowing a complementary analysis of the bioenergetic imbalances associated with the clinical picture.

The quantitative evaluation, carried out through the WHOQOL-BREF, showed important changes in the quality of life of the participants after the intervention. In the psychological domain, the mean scores increased from 36 to 62 points, indicating a substantial improvement in emotional stability, significant improvement in self-esteem, and less recurrence of negative thoughts. In the physical domain, a positive variation from 44 to 61 points was observed, reflecting greater disposition and reduction of somatic symptoms, such as fatigue and muscle pain. The social domain increased from 47 to 63 points, showing greater security in interpersonal interactions and improved ability to establish affective bonds. In the environmental domain, the variations were more discrete, with an average increase of 14%, suggesting a more positive perception of the environment and external living conditions. These data are shown in Table 1.

DOMAINS	FACETS		
	1. Pain and discomfort		
	2. Energy and fatigue		
	3. Sleep and rest		
Domain I – Physical Domain	4. Mobility		
	5. Activities of everyday life		
	6. Dependence on medication or treatments		
	7. Working capacity		
	8. Positive feelings		
	9. Thinking, learning, memory and concentration		
Domain II – Psychological Domain	10. Self-esteem		
Domain II – Psychological Domain	11. Body image and appearance		
	12. Negative feelings		
	13. Spirituality/religion/personal beliefs		
	14. Personal relationships		
Domain III – Social Relations	15. Social support		
	16. Sexual activity		

Table 1 - Mean WHOQOL-BREF scores before and after the intervention



	17. Physical Security and Protection		
Domain IV – Environment	18. Environment in the home		
	19. Financial resources		
	20. Healthcare: availability and quality		
	21. Opportunities to acquire new information and skills		
	22. Participation in recreation and leisure opportunities		
	23. Physical environment: (pollution/noise/traffic/climate)		
	24. Transportation		

Source: The authors

The analysis of the biomagnetic pairs identified in the participants revealed common energetic patterns related to emotional and physiological disturbances. The main pairs found indicate imbalances associated with psychological distress and depressive symptoms, as detailed in Table 2.

BIOMAGNETIC PAIRS			
Pituitary – Navel	Occipital D – Occipital E		
Pituitary – Ascending Colon	Armpit D – Armpit E		
Pituitary Gland – Kidney D	Heart – Heart		
Pituitary gland – sciatic branch D	Pericardium – Pericardium		
Subdiaphragm D – Subdiaphragm E	Ball Joint D – Ball Joint E		
Adrenal – Adrenal	Spleen – Hypothalamus		
Pineal – Pineal	Eyebrow – Eyebrow		
Gallbladder – Gallbladder	Medulla Oblongata – Cerebellum		
Temple D – Temple E	Back of Hand D – Back Hand E		
Parietal D – Parietal E	Heart – Trachea		
Postpineal – Cerebral Amygdala	Sinus D – Heart		
Lung – Heart	Temple D – Heart		
Lung D – Temple			

Table 2 – Common biomagnetic pairs among the participants

Legend: D=right; E=Left. Source: The authors

In addition to the biomagnetic pairs, a survey of the most frequent ECADs among the participants was carried out. These blocked emotions reflect patterns of behavior and thought directly



influenced the emotional and psychological state. The most recurrent ECADs of the participants are presented in Table 3.

DESTRUCTIVE MENTAL STATES, BEHAVIORS, AND ATTITUDES (ECADS)			
Abandonment	Toxic relationships	Anger/hurt/grudge/hatred/fury/wrath	
Helplessness	I repeat mistakes	Irritation	
Betrayal	I reverse priorities	Aggressiveness	
Rejection	Destructive attachment	Lack of vital energy	
Disappointment/I hope a lot (me/ other)	Insecurity	Influence of subtle bodies	
Affective deprivation	Indecision	Psycho-emotional split	
Worthless/no one cares	Weakness	Synaptic nonconformities	
No support	Vulnerability	Lost in the mission/aimless	
Groundless/rootless	Malaise	Depression	
Inner emptiness	Hopelessness/disconsolation	Shock	
I choose the hardest	Stuck in the pain of the past/ nostalgia	Violence	
Sadness	Loneliness	Abuse	
Castration	Loss	Dissatisfaction	
Revolt			

Table 3 - Common mental states, behaviors, and destructive attitudes (ECADs) among the participants

Source: The authors

The qualitative data extracted from the semi-structured interviews were categorized into two major thematic areas. The first category addressed the participants' perceptions of conventional treatments, with subcategories related to stigma about the health condition, view of psychiatric and psychological treatment, time needed to perceive improvement, and perception of the emotional state before the intervention. The second category analyzed the participants' perceptions in relation to the treatment with Medicinal Biomagnetism and DEMAG, including experience with the technique, the time needed to perceive improvement, and emotional self-perception after the sessions. Table 4 presents the answers of the 3 participants organized according to the thematic categories raised.



Category	Subcategory	Participant 1	Participant 2	Participant 3
	1.1 Stigma	He did not bring in his speech	"People say, 'This is	"Everything he told me to do,
	about the health	elements that involved the	freshness. It's no big	I didn't do, because I wanted
	condition	social stigma related to his	deal, no.' Then I say:	to stay locked inside the room.
		condition. His narrative	'If I die, everything	Then he would arrive, curse
		focused more on personal	is fine.' Everyone	me, I would go there and do it
		and emotional aspects of the	thinks it's bad	on impulse. I wanted to lie on
		experience.	because that's how	a bed."
			I am."	
	1.2 View	"The medication hinders me	"The medication	"Sometimes I make food
	on current	a lot. There are times when	helps me sleep.	because my medication has
	treatment	I'm fine, sometimes I'm not,	Which is not the	been changed. This medication
		but I don't know, right? I	worst, right? If I	has been excellent for me. I
		don't understand. I almost	don't sleep, I'm like	sleep well, I wake up calm, not
		don't have therapies with a	a zombie and the	every time. I think it was the
		psychologist. I got better,	group (therapeutic	change of medication."
		yes, and they helped me a	group of the unit)	
		lot."	helps me I don't	
			know how."	
1. Perceptions	1.3 Time	"Sometimes I'm happy, you	"It has always	"Sleep, sometimes, the
aboutconventional	needed to notice	know? I get ready, I put on	been a roller	medicine doesn't have an effect.
treatment	improvement	makeup, I started putting on	coaster. Whenever	I can take 10, but it doesn't work
		makeup again, that I really	a doctor left and	at all. Now I don't know why. I
		liked to put on makeup, I	another came in,	don't know if it's my anxiety. I
		bought new makeup, but	she changed (the	wanted to go back to being the
		there are times that I don't	medication), I got	person I was."
		use anything. I think I'm	worse, then changed	
		ugly, I punch myself, I beat	and I got better."	
		myself with hatred, I beat		
		myself with anger. I feel		
		guilty about everything. If		
		I'm happy I feel guilty, if I'm		
		sad, I feel guilty."		
	1.4 Perception	"Anguish. Very distressed."	"I've been doing the	"It's taking my own life. I don't
	of the current		treatment for a long	deny it, because I ask God
	emotional state		time, but, regardless,	what I did that was so bad in
			so far, nothing has	this world to go through this
			changed inside my	suffering."
			head about me not	
			living."	

Table 4 - Participants' Answers in the Interviews



		1			
2.	Perceptions	2.1 View on	"I felt more willing, being	"My gait improved	"I wasn't doing anything at
about	treatment	treatment	sure of what I want and	because I felt a	home, but now I'm doing some
with	BM and		relief from leg pain. I'm	lot of pain in my	things. I didn't feel pleasure in
DEMA	AG		feeling safer than I want to.	knee. The knee	going out anywhere, but now
			These sessions I had made	pain has improved	I do. Not every time, but I've
			me think of myself. It gave	and, to walk, it is	improved a lot. The housework
			me a certainty that I can	easier. To walk.	and leaving the house, because
			get well. That's what I felt	The headaches were	I was totally stuck inside the
			in the sessions. I got better	not so intense. The	house. Now I'm managing to
			with this suicidal thought. In	pain remains, but it	free myself a little. It was due
			these weeks, I haven't been	is not so strong. In	to the treatment that helped me.
			thinking about it. I've been	the past, it was very	The visions are less, I won't say
			thinking about getting ready,	strong. About my	that it has stopped for good,
			about going out. I want to	anguish, I wasn't	but it doesn't have the amount
			do a lot of things. It's taking	much, but after	that it used to have before this
			away this anguish so strong	what happened,	treatment. It's better now and it
			inside me. It made me reflect	they became very	will get better when everything
			a lot. The sessions relieved	intense To think	comes out, right? because no
			the pain I was feeling. I just	that you are nothing.	one can bear to see something
			have to thank you. I never	When I'm here, it	in front of them every night and
			thought I would get as strong	seems that it erases	during the day. When I recover
			as I was before, because I	things a little bit	well, then I will give more
			was a very strong woman."	from my head, I	thanks to God. It's very bad for
				don't think about	you to be in your living room
				much. Here I don't	and see certain visions inside
				have anyone to	the house. Who doesn't scream?
				criticize me, judge	We are human beings. It
				me, talk to me only	improved the relationship with
				you to help me."	my daughter. My daughter was
					terrible, God forgive me. She
					cursed me a lot and humiliated
					me, but now it's less."

	2.2 Time	"I believe it was from the	"In the first week,	"It was from three. Things were
	needed to notice	third that I got better. The	but the pain and	improving, but not all at once,
	improvement	pain I felt in my knee was	the kneecap that	slowly, falling into place. I
		very great and gave me	came out and didn't	hope it goes from here to there,
		discouragement, I didn't	come out anymore	right? I was really "depressed".
		have the strength to walk. I	was from the third	It was too much. It's so much
		couldn't. Coming here was a	session."	that I ate so much to get fat. I
		sacrifice. This knee pain has		really wanted to die. I didn't
		passed. And I managed to		want to live. It was such a nice
		leave for other places. That		relaxation. I loved these days
		gave me strength. It was		that I did. You feel something
		from there that I succeeded.		different when you finish the
		The conversations with the		treatment. It makes you lazy
		lady that I vented. I began		(laughs), it makes you want to
		to realize that I still have		sleep again. I'm feeling calmer.
		a lot to live for. With these		I was very agitated. I'm shaking
		sessions. I felt cared for.		less, because I was more.
		loved. After these sessions.		With this agitation, my body
		I was left with more positive		trembled right? Now it's little
		thoughts"		it's not as much as on these
				other days I want to get off
				these medicines I want to get
				rid of it At least keep two May
				I be able to relieve my feelings
				may I sleep do my things
				That's all "
	2.3 Perception	"Tranquility I wish there	"I don't know	"I feel very good now. It helped
	of the current	was more I thought it would	sometimes How	me a lot "
	emotional state	last longer. But I'm feeling	do I speak? I feel	
	emotional state	calm Bacausa it halped	that when it stops	
		ma to reflect especially	it will some back	
		about my marriage At that	all over again It	
		moment when I was lying	improves a little and	
		here when the treatment was	then some healt	
		here, when the treatment was	Dut it's not sugar.	
		done, my mind was working.	But it's not every	
		I kepi ininking inai I needed	day that it's like	
		something to have hope. To	this. When I leave	
		keep me standing. So that I	the session, I leave	
		nave a better quality of life."	well. You treat us	
			very well. It brings	
			more calm. I feel a	
1			little calmer."	



Source: The authors

The participants' reports corroborate the quantitative and bioenergetic findings, demonstrating that all of them reported improvement in symptoms and other comorbidities associated with depression. Most of them noticed significant changes from the third treatment session. Although not all of them were able to attend the eight sessions planned in the study, the benefits of the interventions were reported even by those who had a reduced number of consultations. During the interviews, statements were observed that illustrate the participants' perception of the impact of the interventions on their well-being.

One of the participants reported that, as the sessions progressed, she felt progressively lighter, with the feeling of releasing an accumulated emotional load, in addition to perceiving an increase in the willingness to perform daily activities. Another participant mentioned that the treatment made it possible to identify and relieve old emotions, which had not been properly processed before, resulting in improved sleep quality and reduced fatigue. In addition, a third statement highlighted the participant's surprise when she noticed that, in the second session, there was a noticeable change in the way she thought, with a reduction in anguish and an improvement in social interaction.

The interviews also indicated that Medicinal Biomagnetism and DEMAG acted in the resignification of stored emotions, contributing to a more balanced perception of reality and to greater control over negative emotional states. This improvement was reflected both in the WHOQOL-BREF responses and in the participants' personal reports, evidencing a positive change in the clinical picture throughout the intervention. The WHOQOL-BREF scores before and after the intervention are presented in Graphs 1, allowing a clearer visualization of variations in the physical, psychological, social, and environmental domains.



Graph 1 – Comparison of WHOQOL-BREF scores before and after the therapeutic intervention in 24 facets and in the self-assessment of quality of life



Legend: Comparison of percentage scores in the 24 facets of the WHOQOL-BREF instrument and in the Self-Assessment of Quality of Life before and after the intervention with magnetic therapies (Biomagnetism and DEMAG). The gray bars represent the scores before the treatment, and the



colored bars indicate the scores after the intervention, differentiated by domain: blue (Physical), green (Psychological), orange (Social Relationships), purple (Environment) and gold (Self-Assessment of Quality of Life). Consistent improvement was observed in practically all the dimensions evaluated, with emphasis on self-esteem, work capacity, sleep, safety and interpersonal relationships. Source: Authors

Among the 25 indicators evaluated by the WHOQOL-BREF, there was a percentage improvement in the scores of 22 facets after the intervention with Medicinal Biomagnetism and DEMAG. The most significant increases occurred in the facets "Self-esteem" (+58.33), "Sleep and rest" (+50.00), "Activities of daily living" (+50.00), "Physical safety and protection" (+50.00) and "Spirituality and personal beliefs" (+41.67). The self-assessment of quality of life increased from 25.00 to 54.17.

The only three facets with a score reduction after the intervention were: "Dependence on medication and treatments" (-25.00), "Negative feelings" (-41.66), and "Sexual activity" (-8.34). However, the first two represent desirable falls because they are associated with adverse clinical aspects. The distribution of the data shows a general improvement in the perceived quality of life in the physical, psychological, relational and environmental domains, with emphasis on the strengthening of "Self-esteem", "Spirituality" and the ability to "Think, learn, memory and concentration".

DISCUSSION

The results obtained in this study indicate that the application of the Integrative and Complementary Magnetic Practices (PICMAG) of Medicinal Biomagnetism (BM) and Magnetic Emotional Dispersion (DEMAG) had a positive impact on the improvement of the depressive symptoms of the participants. From the quantitative analysis of the WHOQOL-BREF scores, a significant increase was observed in several mean scores of the psychological, physical, social and environmental domains after the intervention, suggesting an improvement in the quality of life and general well-being of the



participants from the third treatment session. This finding was also evidenced in qualitative reports. This finding corroborates studies that associate body-mind interventions with mental health benefits (Belasco, Passinho; Vieira, 2019; Atta; El-Ashry; Mousa, 2024).

In the participants' reports, an increase in disposition, improved mood and reduction in depressive symptoms were observed after the intervention with BM and DEMAG. These results are in line with a growing base of research such as neuroscience, which investigates the effects of magnetic fields on neurophysiology, emotional stability, and modulation of neuronal activity, especially in the context of psychiatric illness (Kan et al., 2023; Sabé et al., 2024). The effects of Static Magnetic Fields (EMFs) on systems have also been the subject of much study, Yang et al. (2022), demonstrated that prolonged exposure to EMFs of 150 mT promoted an increase in locomotor and exploratory activity in mice, indicating positive effects on emotional behavior. In addition, the researchers observed an improvement in the gut microbiota, an essential factor in the communication between the gut-brain axis, which is directly related to psychiatric disorders such as depression and anxiety.

Still in the context of the effects of magnetic fields on the brain, the review by Wang et al. (2024) synthesized evidence on the influence of different types of magnetic fields, varying in intensity and exposure time, on the electrical activity of neurons and intracellular signaling. The study indicates that magnetic fields can modulate neuronal excitability, contributing to emotional stability and stress regulation. This hypothesis is in line with the reports of the participants who, after the BM and DEMAG sessions, mentioned a feeling of calm, less negative emotional load and greater mental clarity, which may be related to the modulation of neuronal activity promoted by the techniques applied.

In addition to the direct effects on neuronal activity, another crucial aspect to consider is the neurochemical regulation promoted by PICMAG. Serotonin and dopamine play central roles in regulating mood and motivation, and evidence suggests that magnetic techniques can modulate these neurotransmitters (Kan et al., 2023; Wang et al., 2024; Sabé et al., 2024). Studies indicate that the reduction of serotonin levels is strongly associated with depressive disorders, justifying the use of

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selective serotonin reuptake inhibitors (SSRIs) in the clinical management of the disease (Belmaker; Agam, 2008; Owens; Nemeroff, 1994). In the present study, the improvement in emotional stability, sleep quality, and disposition reported by the participants may be related to the modulation of serotonergic activity promoted by magnetic and bioenergetic interventions.

Depression is a multifactorial condition that not only compromises mental health but is also often associated with physiological dysfunctions and chronic illnesses such as chronic pain, cardiovascular disease, and metabolic disorders (Aaron et al., 2025). This intersection between mental and physical health reinforces the need for therapeutic approaches that contemplate the individual in an integral way, going beyond traditional pharmacological treatment. In the present study, the BM and DEMAG emerge as complementary alternatives that dialogue with Integrative and Complementary Health Practices (ICP) and conventional treatments, offering a more humanized and multidimensional care.

The results point to an improvement in depressive symptoms, physical disposition, improved mood, sleep quality, self-esteem and the quality of social interactions of the participants. These findings are in line with studies indicating the influence of magnetic fields on the regulation of the neuroendocrine axis and the modulation of neurotransmitters essential for mood (Fan et al., 2021; Yang et al., 2022; Wang et al., 2024). Serotonin, for example, plays a central role in emotional stability and stress response, and its deficiency has been widely associated with depression (Owens; Nemeroff, 1994). The present study suggests that the application of BM and DEMAG may have positively impacted the serotonergic and dopaminergic systems, promoting a neurochemical rebalancing favorable to symptom improvement.

Another relevant point for the discussion is the interaction between depression and chronic pain. Studies show that up to 40% of individuals with chronic pain have depressive and anxiety disorders, evidencing a bidirectional relationship between these conditions (Aaron et al., 2025). This correlation is often mediated by systemic inflammatory processes and dysfunctions in the hypothalamic-pituitary-adrenal axis, which can aggravate the symptoms of both conditions (Iyer et al., 2024). The



fact that the participants in this study reported improvement not only in depressive symptoms, but also in muscle pain and physical discomfort, reinforces the hypothesis that magnetic fields act to modulate the inflammatory response and relieve pain, positively interfering with physical and emotional health as a whole. This perspective is corroborated by Yang et al. (2022), who demonstrated that prolonged exposure to static magnetic fields improved antioxidant capacity and reduced lipid peroxidation in mice, contributing to the maintenance of physiological homeostasis.

The improvement in pain and the relationship with general well-being and quality of life has been evidenced in several studies with the intervention of the BM (Pereira et al., 2023; Vasconcellos et al., 2023; Pavanello et al., 2023; Cintra et al., 2023; Palaikis et al., 2023; Rambo et al., 2023). This fact was also demonstrated in the clinical practice of the BM in the study by Araújo, Ferreira, and Bossa (2022), which aimed to evaluate the medical records of 290 patients treated with the technique and the treatment responses. A reduction in anxiety and nervousness, improvement in emotional state, reduction in depression, improved mood and sleep quality were verified, corroborating the findings of this study.

In addition to biochemical mechanisms, the psychosocial aspects of depression should also be considered. The literature points out that social isolation and lack of emotional support are factors that contribute to the chronicity of the disorder (Evans-Lacko et al., 2018). In this study, it was observed that, throughout the intervention, the participants began to report greater interest in daily activities, improved self-esteem and reduced perception of stigma in relation to their emotional state. These changes may be related to the impact of DEMAG, which acts to reframe emotions and neutralize dysfunctional energy patterns, allowing individuals to reorganize their perception of themselves and their reality, facts observed in studies on the application of PICS that act on the body-mind axis (Lima, 2009; Hsieh; Chiu; Wang, 2013; Kanherkar et al., 2017; Kaliman, 2018; Polrola et al., 2018; Nelson, 2019; Pelissari; Bossa, 2023). In addition, oxytocin, known as the "social bonding hormone," has been linked to reducing anxiety and strengthening interpersonal connections (Carter, 1998; Kosfeld et al., 2005), which may explain part of the benefits reported in the participants' social interaction after



treatment.

While the findings of this study are promising, it is critical to recognize the limitations of this study. The small sample, composed of only three participants, did not allow broad generalizations of the results. Thus, future studies with a larger number of participants, robust experimental design, and measurement of neurochemical and inflammatory biomarkers may contribute to the validation of the mechanisms of action of PICMAG and their clinical applicability.

Finally, the results of this study contribute to the growing body of evidence that points to PICMAG as viable complementary strategies in the treatment of depression, both in mild cases and in severe and persistent cases, as evidenced in this research. The expansion of investigations on the mechanisms of action of these practices can provide a significant advance in the therapeutic approaches available for emotional disorders, especially in public health contexts, such as the Unified Health System (SUS).

CONCLUSION

The results obtained in this study demonstrate that Integrative and Complementary Magnetic Practices (PICMAG), especially Medicinal Biomagnetism (BM) and Magnetic Emotional Dispersion (DEMAG), can contribute significantly to the improvement of depressive symptoms and quality of life of patients. The quantitative analysis, carried out through the WHOQOL-BREF, showed significant progress in the psychological, physical, social and environmental domains, confirming the effectiveness of the interventions in promoting the general well-being of the participants. The subjective perception of the patients, captured through the interviews, reinforced these findings, highlighting positive changes in self-esteem, social interaction, and reduction of negative emotional patterns.

The influence of magnetic fields on the modulation of neurochemical activity and the regulation of the hypothalamic-pituitary-adrenal axis suggests that Medicinal Biomagnetism can



act in a complementary way to conventional approaches, contributing to emotional stability and the relief of physical symptoms associated with depression. In addition, the results indicate that DEMAG played a relevant role in reframing destructive emotional patterns, promoting a positive impact on the way participants deal with their emotions and social interactions.

The relationship between depression and chronic pain, widely documented in the literature, was also observed in this study. The reduction in pain reported by the participants suggests that PICMAG can influence physiological mechanisms related to the inflammatory process and pain perception, favoring homeostasis and overall well-being.

Although the findings are promising, there is a need for additional studies with larger samples and more robust methodologies, including a control group, to validate the mechanisms of action of PICMAG and its large-scale clinical application. In addition, investigating the impact of PICMAG on inflammatory biomarkers and neurotransmitters could better elucidate the neurobiological processes involved in these practices.

It is concluded that PICMAG, low-cost naturopathic practices, represent a valuable complementary therapeutic approach for the management of depression, providing improvements in quality of life and promoting a more holistic view of mental health care. The findings of this study contribute to the expansion of integrative practices in mental health, reinforcing its applicability as a complementary strategy within the SUS. The continuity of research will allow the validation of these findings in larger studies, enabling more individuals to have access to effective therapies for mental disorders.

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