DOI: 10.7860/JCDR/2025/78736.22099

Review Article

Anaesthesia Section

A Narrative Review on Comprehensive Approaches to Chronic Pain Management: Integrating Medical, Psychological, Lifestyle, and Emerging Therapies

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ABSTRACT

Chronic pain, defined as pain lasting longer than three months, profoundly affects physical, emotional, and social wellbeing and cannot be understood through a single disciplinary lens. This narrative review synthesises traditional and emerging strategies for chronic pain management, emphasising a multimodal, patient-centred approach. Pharmacologic therapies—including Non Steroidal Anti-Inflammatory Drugs (NSAIDs), opioids, antidepressants, and anticonvulsants—remain central and may be used alone or in combination with interventional methods such as nerve blocks or spinal cord stimulation, depending on pain phenotype and risk–benefit considerations. Psychological strategies, notably Cognitive-Behavioural Therapy (CBT), mindfulness, and guided imagery, are integrated to modulate pain perception and enhance coping. Concurrent lifestyle modifications—regular physical activity, anti-inflammatory nutrition, weight management, and adequate hydration—are highlighted for improving function and quality of life. The review also discusses barriers to implementation, the varying quality of evidence across conditions, and the need for individualised, patient-centred care. Gaps in long-term outcomes and safety are acknowledged, with future directions pointing toward precision medicine and digital health tools to optimise multimodal pain management.

Keywords: Acupuncture, Analgesics, Cognitive behavioural therapy, Neuromodulation, Physical therapy modalities

INTRODUCTION

Chronic pain management involves the application of therapeutic strategies across multiple medical fields to reduce symptoms while improving patients' quality of life [1]. Chronic pain develops when pain persists beyond the three-month healing period for body tissues [1,2]. Patients require long-term management approaches for chronic pain, especially if the condition progresses into a disease, whereas acute pain typically serves as an indicator of injury or illness [2]. Effective chronic pain management requires a combination of medical interventions, lifestyle modifications, mind-body techniques, alternative therapies, assistive technology, physiotherapy, and thermal (heat/cold) therapy [3,4]. Heat therapy works by relaxing muscles and increasing blood circulation throughout the body [5]. Regular exercise, healthy dietary habits, and weight management also help reduce pain and improve overall wellbeing [6]. Patients can further manage their perception of pain through breathing exercises, massage therapy, chiropractic adjustments, acupuncture, mindfulness practices, and CBT [7,8]. The physical load on painful body parts can be reduced through the use of braces, orthotics, and proper posture maintenance [9]. This narrative review article aims to highlight chronic pain management strategies through medical, psychological, emerging therapeutic, and lifestyle modification approaches. It also emphasises interdisciplinary care, with a primary focus on conventional and evidence-based non pharmacological methods of managing chronic pain.

REVIEW

Medical Management of Chronic Pain

A comprehensive strategy for chronic pain management includes medical treatments, lifestyle modifications, psychological techniques, and alternative therapies, all of which aim to improve function, reduce pain, and enhance quality of life [6]. Various medications, such as NSAIDs, acetaminophen, and opioids, are used to treat severe pain [10,11]. However, prolonged opioid treatment must be strictly monitored by medical professionals due to the risk of dependency [11]. The treatment of neurogenic pain often requires antidepressants, anticonvulsants, and muscle relaxants to reduce spasms [10]. Interventional approaches, including spinal cord stimulation, radiofrequency procedures, nerve blocks, and epidural steroid injections, are also employed to treat chronic and localised pain [12]. These therapeutic techniques reduce pain perception while addressing medical cases beyond the conventional use of pharmacological drugs alone [12].

Psychological Approaches to Chronic Pain

Psychological health and emotional wellbeing play an essential role in shaping how individuals experience and cope with pain [13]. CBT is a well-established treatment that teaches patients new ways of thinking about pain, thereby reducing stress levels and strengthening coping mechanisms [13]. CBT functions as a mental health intervention aimed at detecting and transforming problematic thought patterns that contribute to emotional distress and heightened pain perception [13]. It has been successfully applied in the management of chronic pain conditions such as migraines, fibromyalgia, arthritis, and back pain [14]. Although CBT does not eliminate pain completely, it enables patients to tolerate discomfort more effectively and significantly improves their quality of life [14].

Mindfulness and meditation practices also provide relaxation and help the brain reduce the sensation of suffering, proving effective for pain relief [15]. Similarly, diaphragmatic breathing combined with guided imagery helps manage stress, which in turn decreases pain perception [15]. Consistent use of these psychological strategies leads to sustained improvements in pain management and coping ability [13,15].

Operant-Behavioural Therapy (OBT) is another strategy for treating chronic pain, grounded in the principles of operant conditioning [16]. According to OBT, pain-expressive behaviours (such as verbal complaints, facial expressions, and activity avoidance) can

be reinforced by sociocultural contingencies in the surrounding environment, thereby providing environmental reinforcers that sustain chronic pain experiences [17,18]. OBT aims to modify community and family reinforcement contingencies to reduce maladaptive pain behaviours while increasing adaptive, functional behaviours [19].

OBT techniques typically include graded activity (patients intentionally and gradually increase activity), activity pacing (balancing rest and activity), and time-contingent medication habits (decoupling medication use from pain episodes) [16]. A randomised controlled trial in patients with chronic low back pain showed that those receiving operant-behavioural strategies in addition to physiotherapy demonstrated statistically significant improvements in affective distress, functional impairment, and pain-related cognitions compared to control groups [17,20]. By applying OBT strategies, patients are encouraged to maximise participation in everyday life, demonstrating that functional activities can be achieved despite pain, while simultaneously reducing environmental sociocultural reinforcers that sustain pain behaviours [17].

Mindfulness-Based Stress Reduction (MBSR) is another non pharmacological intervention for chronic pain, incorporating mindfulness meditation, body scanning, and gentle yoga to promote present-moment awareness and emotional regulation [16,21]. MBSR has been shown to significantly reduce depression, pain severity, and functional impairment in patients with conditions such as fibromyalgia, low back pain, and arthritis [16,22]. These benefits are thought to result from changing pain perception, strengthening coping mechanisms, and reducing reactivity to pain-related distress [21]. When combined with CBT, MBSR has proven more effective than standard care in reducing opioid misuse, lowering chronic pain intensity, and improving both quality of life and opioid dependence [23]. Mechanistically, MBSR is believed to alter neural pathways associated with emotion and pain perception, thereby reshaping the cognitive-emotional appraisal of pain [23].

Acceptance and Commitment Therapy (ACT) is an emerging psychological intervention that focuses on increasing psychological flexibility rather than reducing pain intensity [24]. ACT has been shown to improve pain-related functioning, reduce emotional distress, and enhance quality of life in individuals with chronic pain by using mindfulness strategies, cognitive defusion, and value-based goal setting. These methods help patients reduce their struggle with pain and redirect attention toward meaningful life activities [16,25]. ACT has demonstrated effectiveness across various chronic pain conditions, including fibromyalgia, chronic low back pain, and neuropathic pain [24]. Compared with education-only interventions, ACT patients report higher levels of pain acceptance, reduced pain interference, and improved overall functioning [26,27]. Moreover, ACT appears to provide sustained benefits over time, suggesting its value for long-term coping with chronic pain [27,28]. By helping patients disentangle from unhelpful thoughts and pursue a values-based life, ACT empowers individuals to live fully despite chronic pain, making it an important component of multidisciplinary pain management strategies [28].

Emerging Role of Music Therapy in Chronic Pain Management

Music therapy is increasingly recognised by scientific research as a non pharmacological approach to pain management [29]. Healthcare professionals adopt music as an adjunct treatment for chronic pain because it is affordable, non invasive, and capable of eliciting positive patient responses [29]. Introducing music into patient care provides a cost-effective and pleasant means of enhancing relationship-centered care, fostering empathetic and compassionate interactions, and supporting chronic pain management without disrupting medical procedures [29,30].

Activation of brain regions through the limbic system and reward pathways stimulates the release of endorphins, which act as natural painkillers and modulate the perception of pain [31]. Functional Magnetic Resonance Imaging (fMRI) and Electroencephalography (EEG) studies demonstrate that music alters neural activity in brain regions involved in pain processing, such as the insula, prefrontal cortex, and anterior cingulate cortex [31,32]. Slow-tempo, calming music also reduces cortisol and other stress hormones, thereby lowering the body's physiological response to pain [31].

The brain directs its attention away from pain signals through music, allowing patients to experience reduced pain sensations by creating an inner psychological barrier [30]. Selecting music based on patient preference enhances psychological bonding and leads to improved pain reduction [33]. Music serves multiple functions in clinical settings, including palliative care, chronic pain management, and postsurgical rehabilitation, as it reduces the need for opioid analgesics [33]. Listening to music for relaxation may also improve sleep quality in individuals with chronic pain, as disturbed sleep often worsens pain perception [33]. Therapeutic music is a risk-free, cost-effective, and accessible strategy that can complement traditional treatments; however, further research is needed to identify best practices for applying these interventions [30,31]. The role of music therapy in the management of chronic pain is illustrated in [Table/Fig-1] [16-20].

Key aspect	Details	References
Scientific basis	Music therapy is an accepted non-drug pain management approach supported by research.	[16]
Affordability and accessibility	Music therapy is a low-cost, non invasive treatment that enhances patient care without disrupting medical procedures.	[16,17]
Neurological mechanisms	Activates the limbic system and reward pathways, releasing endorphins that act as natural painkillers.	[18]
Brain regions involved	Alters neural activity in pain-processing areas such as the insula, prefrontal cortex, and anterior cingulate cortex.	[18,19]
Reduction of stress hormones	Slow-tempo music lowers cortisol and stress hormones, reducing the body's pain response.	[18]
Distraction from pain	Directs attention away from pain signals, creating a psychological barrier that decreases pain perception.	[17]
Personalised music selection	Tailoring music to patient preferences enhances psychological bonding and pain relief.	[20]
Clinical applications	Used in palliative care, chronic pain management, and postsurgical rehabilitation, reducing opioid use.	[20]
Impact on sleep	Improves sleep quality for chronic pain patients, reducing pain perception associated with disturbed sleep.	[20]
Future research needs	Further studies are needed to determine best practices for effective implementation in clinical settings.	[17,18]

[Table/Fig-1]: Role of music therapy in management of chronic pain [16-20].

Lifestyle Modifications for Chronic Pain Relief: Exercise, Nutrition, and Weight Management

Adopting a healthier lifestyle can lead to better pain control and improved overall health [6]. Regular participation in activities such as yoga, swimming, and walking helps individuals maintain mobility while preventing muscle tension [34]. A well-balanced diet rich in anti-inflammatory foods, including leafy greens, berries, curcumin, and omega-3 fatty acids from fish, has been shown to reduce both chronic pain and inflammation [35]. Nutritional interventions guided by dietitians not only alleviate discomfort but also improve nutritional intake and overall quality of life in people with chronic pain [36,37].

Excess body weight exacerbates pain symptoms because being overweight places undue stress on joints, muscles, and nerves [35]. Proper hydration combined with adequate nutrition serves as a general method of pain control [37]. Intermittent fasting has also been shown to prevent or slow the progression of chronic inflammatory diseases associated with chronic pain by reducing

central and peripheral inflammation [37]. Decreasing the intake of proinflammatory foods while increasing consumption of fruits, vegetables, and unsaturated fats can help relieve chronic pain [36]. Whole-grain diets, salmon, fruits, green vegetables, and olive oil are examples of foods that support these dietary goals [37].

Ergonomic Solutions and Thermal Therapies for Chronic Pain Relief

Ergonomic adjustments and the use of assistive technologies can significantly reduce pressure on painful areas [38,39]. Braces, supports, and orthotics provide joint stability and reduce joint stress, particularly in individuals with arthritis or back pain [1,39]. Proper ergonomics—such as using supportive chairs, maintaining good posture, and organising workspaces correctly—can help prevent excessive strain on the body [40]. Investing in ergonomic furniture, such as standing desks or supportive chairs, is especially beneficial for people who spend long hours sitting, as it enhances comfort and reduces pain [38]. Even small adjustments to daily routines can make a substantial difference in managing pain over the long term [38].

Heat and cold therapy are simple yet effective methods for relieving chronic pain. Heat therapy, delivered through warm baths, heating pads, or heat wraps, can improve blood circulation, ease stiffness, and relax muscles, making it especially helpful for conditions such as arthritis and muscle pain [28]. Cold therapy, using ice packs or cold compresses, helps reduce swelling, inflammation, and acute pain [29]. Alternating between heat and cold therapies may provide greater relief, depending on the type and location of pain [28,29].

Non Invasive Neuromodulation Techniques for Chronic Pain Management

Non invasive neuromodulation techniques have gained attention as promising strategies for chronic pain management. Transcranial Direct Current Stimulation (tDCS) and Transcranial Magnetic Stimulation (TMS) are among the most studied methods for their ability to modulate brain function and reduce pain perception [41].

tDCS involves placing electrodes on the scalp to deliver a low-intensity electrical current to specific brain regions [41]. Depending on electrode placement, this current can either increase or decrease neuronal excitability [30]. By stimulating areas such as the motor cortex and dorsolateral prefrontal cortex—both implicated in pain regulation—tDCS can alter pain perception [31]. It is considered a promising adjuvant therapy for chronic pain conditions, including fibromyalgia, neuropathic pain, and migraines [42]. Because it is painless, low-cost, and portable, tDCS is also being increasingly explored for at-home use under physician supervision [41,42].

The TMS is another non invasive neuromodulation technique that induces electrical currents in specific areas of the brain through the application of magnetic fields [43]. Unlike tDCS, TMS uses a coil placed on the scalp to stimulate targeted neural circuits [43]. Activation of the motor cortex—an area essential in pain processing—through repetitive TMS (rTMS) has been shown to reduce chronic pain [44]. It has demonstrated effectiveness in conditions such as fibromyalgia, migraines, and chronic neuropathic pain [43,44].

TMS is a structured yet highly effective treatment for chronic pain management, typically administered in clinical settings and requiring multiple sessions for long-term results [43]. These techniques may serve as useful adjuncts or alternatives to traditional pain management approaches, with the added advantage of being non invasive [41,43]. Non invasive neuromodulation techniques for chronic pain management are illustrated in [Table/Fig-2] [30-33].

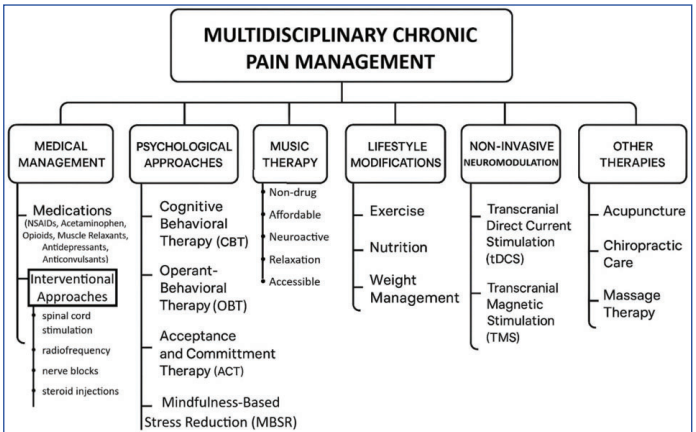
Complementary and Alternative Therapies for Chronic Pain Management

Many individuals benefit from complementary and alternative therapies alongside conventional treatment. Acupuncture, an ancient practice involving the insertion of thin needles at specific body points, is believed to stimulate endorphin release and enhance natural pain relief [7,45]. Chiropractic therapy can relieve nerve compression and improve spinal alignment, making it effective for musculoskeletal and spinal disorders [46]. Massage therapy serves as another useful option, relaxing tense muscles, improving circulation, and promoting overall relaxation [46].

Although these therapies may not be effective for every patient, they can serve as beneficial complementary options for chronic pain management [7,46]. A multidisciplinary approach to chronic pain management is depicted in [Table/Fig-3].

Technique	Mechanism	Targeted brain regions	Clinical applications	Advantages	References
transcranial Direct Current Stimulation (tDCS)	Uses electrodes on the scalp to deliver a low electrical current, modulating neuronal excitability.	Motor cortex, dorsolateral prefrontal cortex	Fibromyalgia, neuropathic pain, migraines	Painless, low cost, portable, home-use potential	[30,31]
Transcranial Magnetic Stimulation (TMS)	Uses magnetic fields to induce electrical currents in specific brain areas.	Motor cortex	Fibromyalgia, migraines, chronic neuropathic pain	Highly effective, structured clinical treatment	[32,33]
rTMS (Repetitive Transcranial Magnetic Stimulation)	Repetitive stimulation of the motor cortex to regulate pain perception.	Motor cortex	Chronic pain management in clinical settings	Long-term pain relief with multiple sessions	[32,33]

[Table/Fig-2]: Non invasive neuromodulation techniques for management of chronic pain [30-33].



[Table/Fig-3]: Multidisciplinary chronic pain management approaches.

CONCLUSION(S)

Chronic pain management requires a personalised, multimodal approach that integrates medical, psychological, lifestyle, and emerging therapeutic strategies. The key message from this review is that no single intervention can fully address the complexity of chronic pain. Instead, a combination of pharmacological treatments, CBT, ACT, MBSR, regular exercise, balanced nutrition, and body weight management is necessary for effective pain reduction and improved quality of life. Additional supportive interventions such as music therapy, acupuncture, massage, and chiropractic care can further enhance patient-centered care, offering non invasive and complementary treatment options. Non invasive neuromodulation techniques such as tDCS and TMS also show promise for the future of chronic pain neuroscience and management. Ultimately, an interdisciplinary, patient-centered approach not only alleviates symptoms but also empowers patients to reclaim function, autonomy, and quality of life.

REFERENCES

[1] Danilov A, Danilov A, Barulin A, Kurushina O, Latysheva N. Interdisciplinary approach to chronic pain management. Postgrad Med. 2020;132(Suppl 3):05-09.
[2] Gatchel RJ, McGeary DD, McGeary CA, Lippe B. Interdisciplinary chronic pain management: Past, present, and future. Am Psychol. 2014;69(2):119-30.
[3] Hylands-White N, Duarte RV, Raphael JH. An overview of treatment approaches for chronic pain management. Rheumatol Int. 2017;37(1):29-42.
[4] Blackwell B, Galbraith JR, Dahl DS. Chronic pain management. Hosp Community Psychiatry. 1984;35(10):999-1008.
[5] Maharty DC, Hines SC, Brown RB. Chronic low back pain in adults: Evaluation and management. Am Fam Physician. 2024;109(3):233-44.
[6] Takai Y, Yamamoto-Mitani N, Abe Y, Suzuki M. Literature review of pain management for people with chronic pain. Jpn J Nurs Sci. 2015;12(3):167-83.
[7] Eshkevari L. Acupuncture and chronic pain management. Annu Rev Nurs Res. 2017;35(1):117-34.
[8] Williams AC de C, Fisher E, Hearn L, Eccleston C. Psychological therapies for the management of chronic pain (excluding headache) in adults. Cochrane Database Syst Rev. 2020;8(8):CD007407.
[9] Shetty A, Delanerolle G, Deng C, Thillainathan A, Cavalini H, Yang X, et al. A systematic review and bayesian meta-analysis of medical devices used in chronic pain management. Sci Rep. 2024;14(1):13549.
[10] Schnitzer TJ. Non-NSAID pharmacologic treatment options for the management of chronic pain. Am J Med. 1998;105(1B):45S-52S.
[11] Koller G, Schwarzer A, Halfter K, Soyka M. Pain management in opioid maintenance treatment. Expert Opin Pharmacother. 2019;20(16):1993-2005.
[12] Viswanath O, Urits I, Bouley E, Peck JM, Thompson W, Kaye AD. Evolving spinal cord stimulation technologies and clinical implications in chronic pain management. Curr Pain Headache Rep. 2019;23(6):39.
[13] Bushnell MC, Ceko M, Low LA. Cognitive and emotional control of pain and its disruption in chronic pain. Nat Rev Neurosci. 2013;14(7):502-11.
[14] Kela I, Kakarala CL, Hassan M, Belavadi R, Gudigopuram SVR, Raguthu CC, et al. Chronic pain: A complex condition with a multi-tangential approach. Cureus. 2021;13(11):e19850.
[15] Hilton L, Hempel S, Ewing BA, Apaydin E, Xenakis L, Newberry S, et al. Mindfulness meditation for chronic pain: Systematic review and meta-analysis. Ann Behav Med Publ Soc Behav Med. 2017;51(2):199-213.
[16] Sturgeon JA. Psychological therapies for the management of chronic pain. Psychol Res Behav Manag. 2014;7:115-24.
[17] Leeuw M, Goossens MEJB, van Breukelen GJP, de Jong JR, Heuts PHTG, Smeets RJEM, et al. Exposure in vivo versus operant graded activity in chronic low back pain patients: Results of a randomized controlled trial. Pain. 2008;138(1):192-207.
[18] Gatzounis R, Schrooten MGS, Crombez G, Vlaeyen JWS. Operant learning theory in pain and chronic pain rehabilitation. Curr Pain Headache Rep. 2012;16(2):117-26.
[19] Williams AC de C, Eccleston C, Morley S. Psychological therapies for the management of chronic pain (excluding headache) in adults. Cochrane Database Syst Rev. 2012;2012(11):CD007407.
[20] Geraets JJXR, Goossens MEJB, de Bruijn CPC, Köke AJA, de Bie RA, Pelt RAGB, et al. A behavioural treatment for chronic shoulder complaints: Concepts, development, and study design. Aust J Physiother. 2004;50(1):33-38.
[21] Majeed MH, Ali AA, Sudak DM. Mindfulness-based interventions for chronic pain: Evidence and applications. Asian J Psychiatry. 2018;32:79-83.
[22] Hofmann SG, Gómez AF. Mindfulness-based interventions for anxiety and depression. Psychiatr Clin North Am. 2017;40(4):739-49.
[23] Cherkin DC, Sherman KJ, Balderson BH, Cook AJ, Anderson ML, Hawkes RJ, et al. Effect of mindfulness-based stress reduction vs cognitive behavioural therapy or usual care on back pain and functional limitations in adults with chronic low back pain: A randomized clinical trial. JAMA. 2016;315(12):1240-49.
[24] Ducasse D, Fond G. Acceptance and commitment therapy. L'Encephale. 2015;41(1):01-09.
[25] Hughes LS, Clark J, Colclough JA, Dale E, McMillan D. Acceptance and Commitment Therapy (ACT) for chronic pain: A systematic review and meta-analyses. Clin J Pain. 2017;33(6):552-68.
[26] Graham CD, Gouick J, Krahé C, Gillanders D. A systematic review of the use of Acceptance and Commitment Therapy (ACT) in chronic disease and long-term conditions. Clin Psychol Rev. 2016;46:46-58.
[27] Martinez-Calderon J, García-Muñoz C, Rufo-Barbero C, Matias-Soto J, Cano-García FJ. Acceptance and commitment therapy for chronic pain: An overview of systematic reviews with meta-analysis of randomized clinical trials. J Pain. 2024;25(3):595-617.
[28] Levin ME, Krafft J, Twohig MP. An overview of research on acceptance and commitment therapy. Psychiatr Clin North Am. 2024;47(2):419-31.
[29] Garza-Villarreal EA, Pando V, Vuust P, Parsons C. Music-induced analgesia in chronic pain conditions: A systematic review and meta-analysis. Pain Physician. 2017;20(7):597-610.
[30] Kemper KJ, Danhauer SC. Music as therapy. South Med J. 2005;98(3):282-88.
[31] Arnold CA, Bagg MK, Harvey AR. The psychophysiology of music-based interventions and the experience of pain. Front Psychol. 2024;15:1361857.
[32] Mussigmann T, Bardel B, Lefaucheur JP. Resting-state electroencephalography (EEG) biomarkers of chronic neuropathic pain. A systematic review. NeuroImage. 2022;258:119351.
[33] Cournoyer Lemaire E, Perreault M. The use of music in the treatment of chronic pain: A scoping review. Pain Manag. 2024;14(10-11):579-89.
[34] Gray C, McCormack S. Yoga for chronic non-malignant pain management: A review of clinical effectiveness, cost-effectiveness and guidelines [Internet]. Ottawa (ON): Canadian Agency for Drugs and Technologies in Health; 2019 [cited 2025 Feb 14]. (CADTH Rapid Response Reports). Available from: http://www.ncbi.nlm.nih.gov/books/NBK546324/.
[35] Elma Ö, Brain K, Dong HJ. The importance of nutrition as a lifestyle factor in chronic pain management: A narrative review. J Clin Med. 2022;11(19):5950.
[36] Frediani JK, Lal AA, Kim E, Leslie SL, Boorman DW, Singh V. The role of diet and non-pharmacologic supplements in the treatment of chronic neuropathic pain: A systematic review. Pain Pract Off J World Inst Pain. 2024;24(1):186-210.
[37] Dragan S, Şerban MC, Damian G, Buleu F, Valcovici M, Christodorescu R. Dietary patterns and interventions to alleviate chronic pain. Nutrients. 2020;12(9):2510.
[38] Sizer PS, Phelps V, Brismée JM, Cook C, Dedrick L. Ergonomic pain--part 2: Differential diagnosis and management considerations. Pain Pract Off J World Inst Pain. 2004;4(2):136-62.
[39] Choi HYJ. Nonpharmacologic and rehabilitative strategies to address chronic pain. Prim Care. 2022;49(3):403-13.
[40] Faucett J, McCarthy D. Chronic pain in the workplace. Nurs Clin North Am. 2003;38(3):509-23.
[41] Tedeschi R. Transcranial direct current stimulation for chronic foot pain: A comprehensive review. eNeurologicalSci. 2024;35:100498.
[42] Nascimento RMD, Cavalcanti RL, Souza CG, Chaves G, Macedo LB. Transcranial direct current stimulation combined with peripheral stimulation in chronic pain: A systematic review and meta-analysis. Expert Rev Med Devices. 2023;20(2):121-40.
[43] Knotkova H, Hamani C, Sivanesan E, Le Beuffe MFE, Moon JY, Cohen SP, et al. Neuromodulation for chronic pain. Lancet Lond Engl. 2021;397(10289):2111-24.
[44] Fernandes AM, Graven-Nielsen T, de Andrade DC. New updates on transcranial magnetic stimulation in chronic pain. Curr Opin Support Palliat Care. 2022;16(2):65-70.
[45] Lee TL. Acupuncture and chronic pain management. Ann Acad Med Singapore. 2000;29(1):17-21.
[46] Urits I, Schwartz RH, Orhurhu V, Maganty NV, Reilly BT, Patel PM, et al. A comprehensive review of alternative therapies for the management of chronic pain patients: Acupuncture, Tai Chi, osteopathic manipulative medicine, and chiropractic care. Adv Ther. 2021;38(1):76-89.

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PLAGIARISM CHECKING METHODS: [Jain H et al.]
- Plagiarism X-checker: Feb 22, 2025
- Manual Googling: Jun 08, 2025
- iThenticate Software: Jun 10, 2025 (12%)

ETYMOLOGY: Author Origin

EMENDATIONS: 5

AUTHOR DECLARATION:
- Financial or Other Competing Interests: None
- Was informed consent obtained from the subjects involved in the study? NA
- For any images presented appropriate consent has been obtained from the subjects. NA

Date of Submission: **Feb 19, 2025**
Date of Peer Review: **Jun 05, 2025**
Date of Acceptance: **Jun 12, 2025**
Date of Publishing: **Dec 01, 2025**