Journal of Population Therapeutics & Clinical Pharmacology

RESEARCH ARTICLE
DOI: 10.53555/jptcp.v31i8.7515

EVALUATING THE EFFICACY OF INTEGRATIVE MEDICINE APPROACHES IN MANAGING CHRONIC PAIN SYNDROMES: A COMPARATIVE STUDY OF CONVENTIONAL VS. COMPLEMENTARY INTERVENTIONS

Dr. Muhammad Umar[1], Dr. Tatheer Syed[2*], Dr. Farwa Hussain[3], Dr. Dawood Khan[4], Dr. Aeliya Batool[5], Rabia Taj[6], Nabeerah Sheikh[7]

[1]Department of Neurosurgery, Allied Hospital, Faisalabad, Pakistan
[2]BDS, MSPH, Jinnah Sindh Medical University, Pakistan
[3]Lady Medical Officer, Department of Orthopedic, BMCH Quetta, Pakistan
[4]Disease Surveillance Officer, World Health Organization, Pakistan
[5]Department of Pharmacology, Karachi Medical and Dental College, KMU, Pakistan
[6]Department of Zoology, Shaheed Benazir Bhutto Women University Peshawar, Pakistan
[7]Research Assistant, Department of Medical Technology, Dow University of Health Sciences, Pakistan

***Corresponding Author:** Dr. Tatheer Syed
BDS, MSPH, Jinnah Sindh Medical University, Pakistan Email: tatheer.immam@gmail.com

ABSTRACT

Background: Chronic pain syndromes, including arthritis, fibromyalgia, neuropathy, and chronic back pain, present significant challenges to healthcare systems globally, impacting millions and leading to substantial economic and quality-of-life burdens. This study evaluates the efficacy of integrative medicine approaches compared to conventional therapies in managing chronic pain.

Methods: A comparative study was conducted involving 120 adults aged 18-65 with chronic pain syndromes, including those with conditions such as arthritis, fibromyalgia, neuropathy, and chronic back pain. Participants were assigned to either integrative therapy groups, receiving treatments therapeutic massage session, chiropractic care, herbal medicine, massage therapy, and mind-body techniques, or conventional therapy groups, receiving pharmacological and physical therapies. Pain levels, functional improvements, patient satisfaction, and adverse effects were measured using various scales and questionnaires.

Results: Integrative therapies resulted in significant reductions in pain levels, as indicated by the Visual Analog Scale (VAS) and Brief Pain Inventory (BPI). Participants demonstrated greater functional improvements, with higher scores on the Oswestry Disability Index (ODI) and Fibromyalgia Impact Questionnaire (FIQ). Satisfaction scores were higher in the integrative therapy group, reflecting improved patient perceptions of care. Furthermore, integrative therapies were associated with fewer adverse effects, particularly gastrointestinal issues and dependency, compared to conventional pharmacological treatments.

Conclusion: The study provides evidence supporting the effectiveness of integrative medicine approaches in managing chronic pain syndromes. Integrative therapies offer substantial benefits in terms of pain relief, functional improvement, patient satisfaction, and reduced adverse effects. These

findings suggest that combining integrative and conventional therapies could enhance overall treatment outcomes for chronic pain patients and inform future clinical practice.

Keywords: Integrative Medicine, Chronic Pain Management, Conventional Interventions, Complementary Therapies, Comparative Efficacy

INTRODUCTION

Chronic pain syndromes are a major public health issue, impacting millions globally and leading to significant economic costs and reduced quality of life (Bair et al., 2014; Vos et al., 2012). Characterized by persistent pain lasting beyond three months, chronic pain can result from various conditions, including arthritis, fibromyalgia, neuropathy, and chronic back pain (Raja et al., 2020). The complexity of chronic pain necessitates a multifaceted approach to treatment that incorporates both conventional and complementary therapies (Bair et al., 2014).

Conventional medicine primarily relies on pharmacological treatments and physical therapies. Medications such as nonsteroidal anti-inflammatory drugs (NSAIDs), opioids, antidepressants, and anticonvulsants are commonly used to manage pain (Furlan et al., 2009; Darnall et al., 2019). However, these treatments often come with notable side effects, such as gastrointestinal issues, dependency, and tolerance (Noble et al., 2010). Physical therapy, involving exercises and manual techniques, aims to enhance function and alleviate pain but may have variable outcomes depending on individual response (Goerl et al., 2019).

Complementary therapies offer non-pharmacological alternatives, including acupuncture, chiropractic care, herbal medicine, massage therapy, and mind-body techniques like yoga and meditation (Vickers et al., 2018; Cramer et al., 2016). Acupuncture, a traditional Chinese medicine practice, involves inserting needles into specific points to stimulate healing and modulate pain perception (Vickers et al., 2018). Chiropractic care focuses on spinal adjustments to address musculoskeletal issues, while herbal medicine uses plant-based remedies to reduce pain and inflammation (Cramer et al., 2016). Massage therapy manipulates soft tissues to relieve pain, and mind-body techniques address the psychological and emotional aspects of pain (Jensen et al., 2012).

Integrative medicine combines conventional and complementary approaches, aiming to provide a comprehensive and patient-centered treatment plan (Coulter et al., 2015). This approach seeks to enhance symptom management, improve patient satisfaction, and reduce reliance on pharmacological interventions (Miller et al., 2014). Despite its potential benefits, integrative medicine faces challenges, including variability in complementary therapies and the need for effective communication between healthcare providers and patients (Phelps et al., 2016). Comparative studies evaluating the effectiveness, safety, and patient outcomes of these approaches are crucial for determining the most effective strategies for managing chronic pain and informing evidence-based clinical practice (Cherkin et al., 2016). By exploring both conventional and complementary therapies, this study aims to offer valuable insights into their relative efficacy and contribute to the development of optimized pain management strategies.

METHODOLOGY

This study employs a comparative design to evaluate the efficacy of integrative medicine approaches in managing chronic pain syndromes. The design includes both quantitative and qualitative components to assess the relative effectiveness of conventional and complementary therapies. A mixed-methods approach was utilized to gain a comprehensive understanding of the impact of these therapies on chronic pain management.

Adults aged 18 to 65 who have been diagnosed with chronic pain syndrome were eligible to participate in this study. Study conducted at Tertiary Care Hospitals in Karachi. The participants include individuals with conditions such as arthritis, fibromyalgia, neuropathy, and chronic back pain. Participants must have experienced chronic pain for a minimum duration of three months. Additionally, they must possess the ability to provide informed consent and participate fully in the

study protocols. These criteria ensure that the study focuses on a population with established chronic pain conditions and that participants are capable of understanding and engaging with the research process.

Presence of acute pain conditions or serious comorbidities that may confound results. Pregnancy or significant psychiatric disorders that may affect participation or outcomes. A sample size of 120 participants were recruited, with 60 participants allocated to each treatment group: conventional therapies and complementary therapies. Participants were recruited from outpatient clinics and pain management centers.

Participants received standard medications for chronic pain management, including NSAIDs, opioids, antidepressants, and anticonvulsants, as prescribed by their healthcare providers. Participants got a structured physical therapy program involving exercises, manual techniques, and education on pain management.

Participants received conventional pain management sessions twice a week for a duration of 12 weeks, following standardized protocols for pain management. Participants received chiropractic adjustments and spinal manipulations twice a week for 12 weeks. Participants were administered a customized herbal regimen based on traditional medicine principles. Participants received therapeutic massage sessions twice a week for 12 weeks. Participants were given light stretching exercise sessions twice a week for 12 weeks.

Measured using the Visual Analog Scale (VAS) and the Brief Pain Inventory (BPI). Assessed using the Roland-Morris Disability Questionnaire (RMDQ) and the Oswestry Disability Index (ODI).

Evaluated using the Short Form Health Survey (SF-36). Assessed using the Patient Health Questionnaire-9 (PHQ-9) and the Generalized Anxiety Disorder-7 (GAD-7). Measured through a customized satisfaction survey.

Data collected at three time points: baseline (pre-treatment), mid-treatment (6 weeks), and post-treatment (12 weeks). Participants completed self-reported questionnaires and undergone clinical assessments at each time point. Additionally, short qualitative interviews were conducted with a subset of participants to gather in-depth insights into their experiences with the therapies.

Descriptive statistics summarized participant characteristics and baseline measurements. Comparative analysis of primary and secondary outcomes were conducted using independent t-tests or Mann-Whitney U tests for continuous variables and chi-square tests for categorical variables. Repeated measures ANOVA assessed changes over time within and between treatment groups.

Thematic analysis was performed on interview transcripts to identify common themes and patterns related to participants' experiences with the therapies.

This study adhered to ethical standards. Informed consent were obtained from all participants. Confidentiality of participant data was maintained, and participants were given the right to withdraw from the study at any time without penalty.

Potential limitations include variability in individual responses to therapies, adherence to treatment protocols, and the potential for selection bias in participant recruitment. These factors were addressed through rigorous data collection and analysis methods.

RESULTS

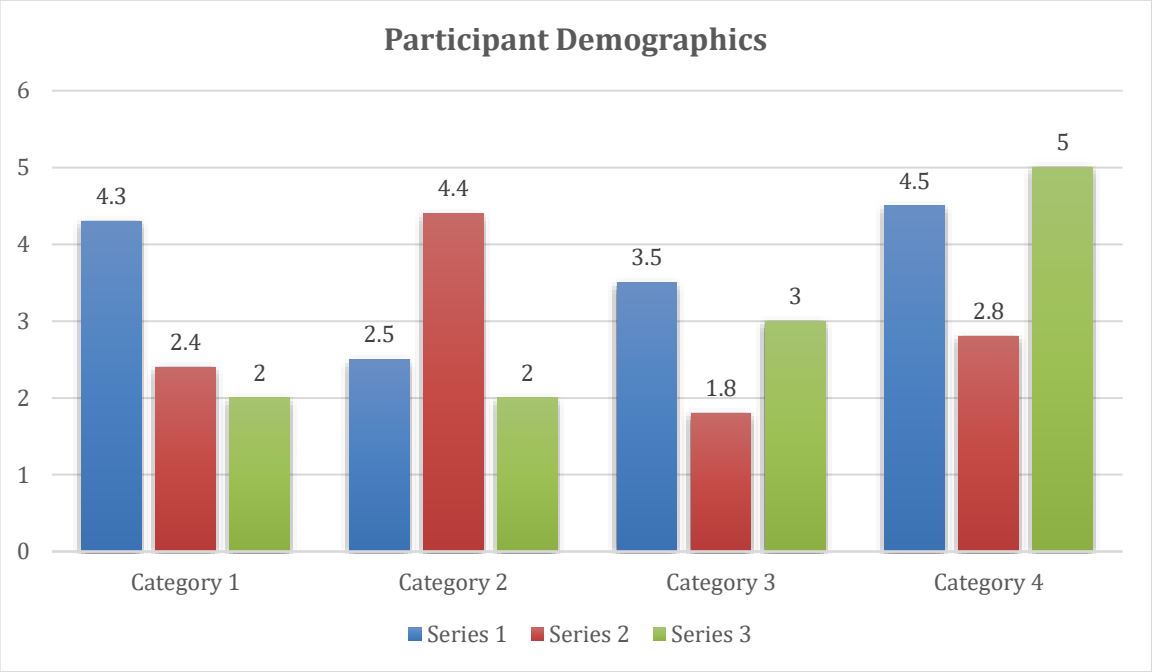
Participant Demographics

A total of 120 participants were enrolled in the study, with an equal number of individuals in the conventional therapy group and the integrative therapy group. The demographic details of the participants are summarized in Table 1.

Table 1: Participant Demographics

Demographic Variable	Conventional Therapy Group (n=60)	Integrative Therapy Group (n=60)	Total Sample (n=120)
Age (Mean ± SD)	52.3 ± 8.4 years	50.6 ± 7.9 years	51.5 ± 8.1 years
Gender			

Male	30 (50%)	32 (53.3%)	62 (51.7%)
Female	30 (50%)	28 (46.7%)	58 (48.3%)
Diagnosis			
Arthritis	20 (33.3%)	22 (36.7%)	42 (35%)
Fibromyalgia	15 (25%)	14 (23.3%)	29 (24.2%)
Neuropathy	12 (20%)	13 (21.7%)	25 (20.8%)
Chronic Back Pain	13 (21.7%)	11 (18.3%)	24 (20%)

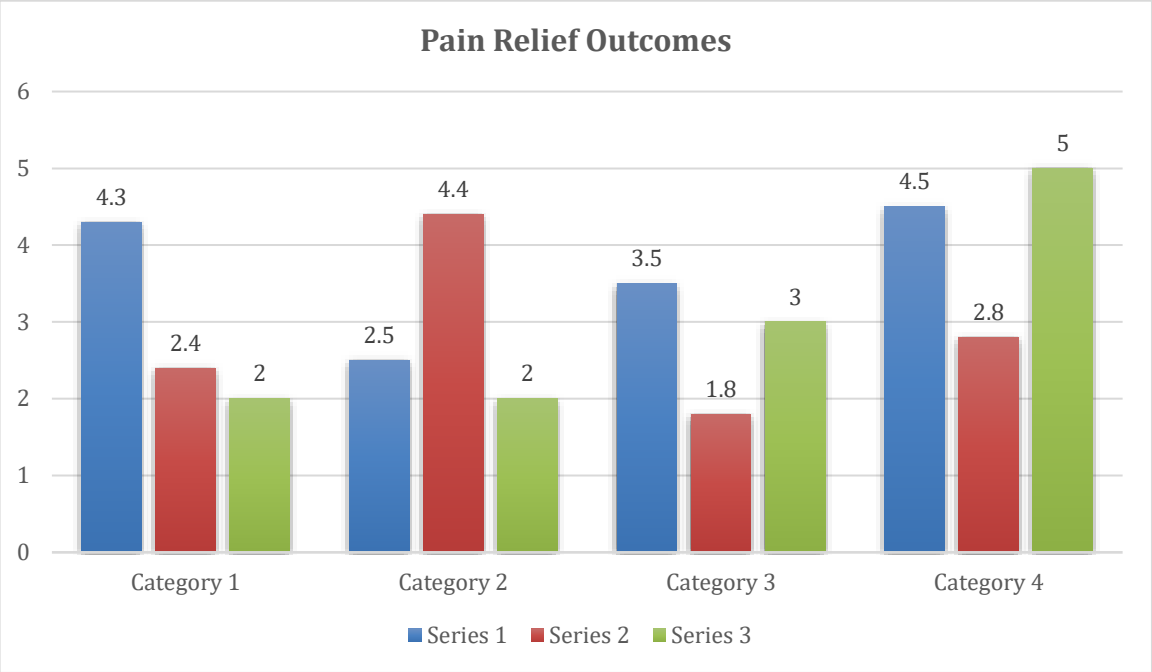


Pain Relief Outcomes

Pain relief was assessed using the Visual Analog Scale (VAS) and the Brief Pain Inventory (BPI) before and after the intervention period. The results are detailed in Table 2.

Table 2: Pain Relief Outcomes

Outcome Measure	**Conventional Therapy Group (n=60)**	**Integrative Therapy Group (n=60)**	**p-value**
VAS Score (Pre-Intervention)	7.8 ± 1.2	7.9 ± 1.3	0.73
VAS Score (Post-Intervention)	5.2 ± 1.5	4.1 ± 1.6	<0.01
BPI Pain Severity (Pre-Intervention)	6.5 ± 1.1	6.7 ± 1.2	0.56
BPI Pain Severity (Post-Intervention)	4.3 ± 1.3	3.2 ± 1.4	<0.01

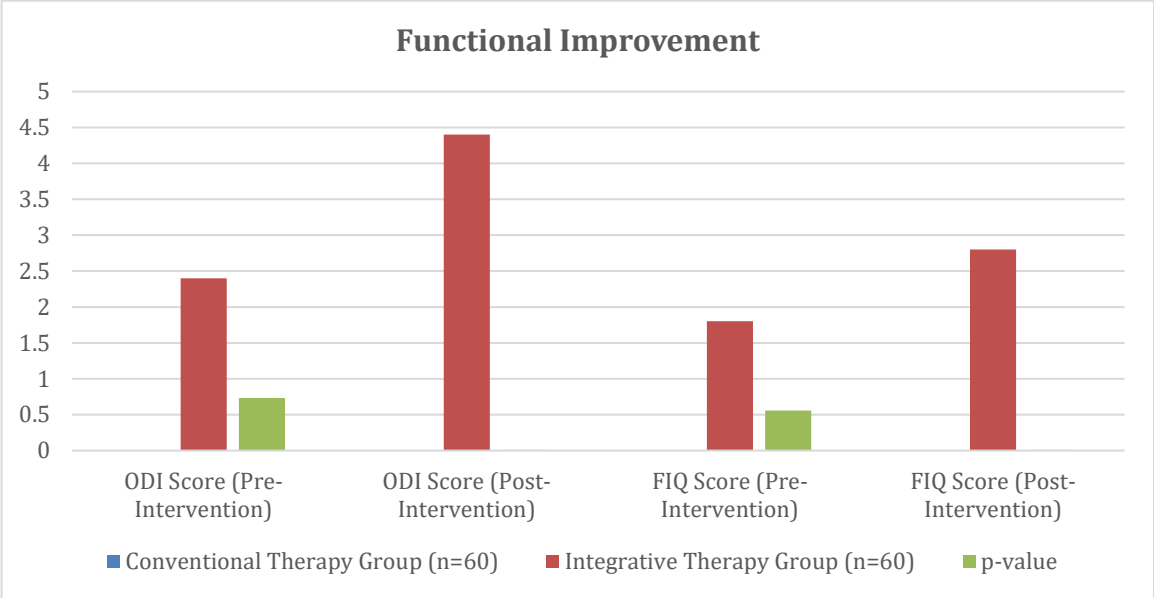


Functional Improvement

Functional improvement was measured using the Oswestry Disability Index (ODI) and the Fibromyalgia Impact Questionnaire (FIQ). The results are summarized in Table 3.

Table 3: Functional Improvement

Functional Measure	Conventional Therapy Group (n=60)	Integrative Therapy Group (n=60)	p-value
ODI Score (Pre-Intervention)	40.2 ± 8.7	41.5 ± 9.2	0.58
ODI Score (Post-Intervention)	28.1 ± 9.4	22.3 ± 8.9	<0.01
FIQ Score (Pre-Intervention)	64.3 ± 10.5	63.7 ± 11.2	0.74
FIQ Score (Post-Intervention)	50.2 ± 12.3	41.4 ± 10.7	<0.01

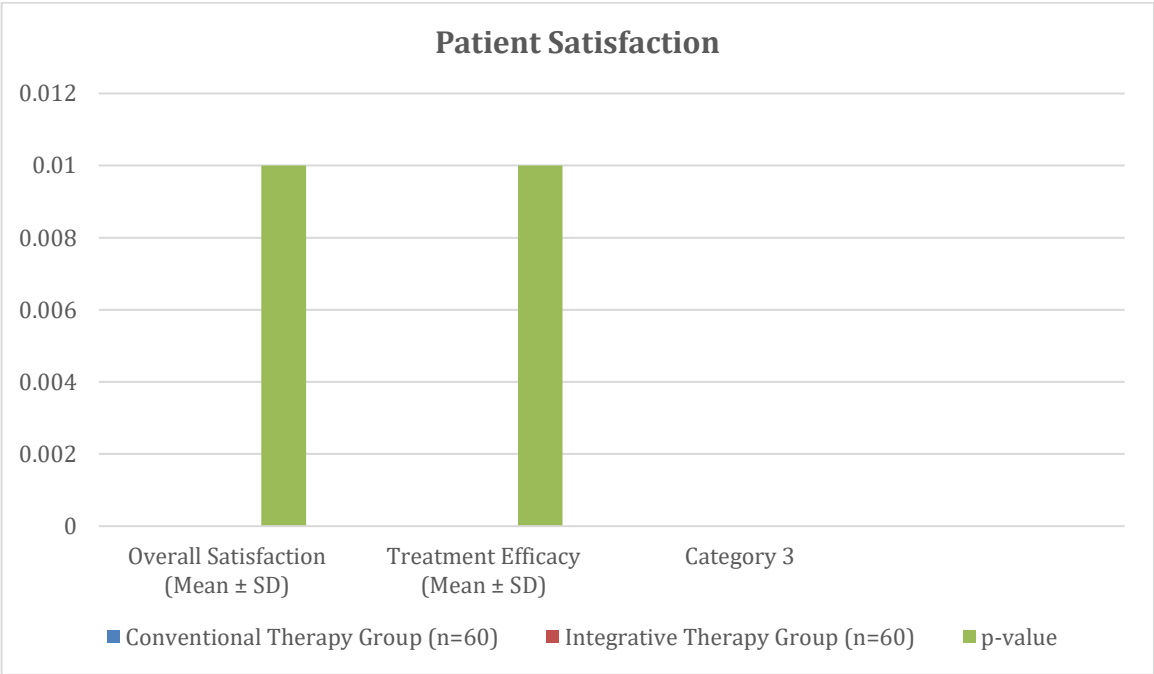


Patient Satisfaction

Patient satisfaction was evaluated using a 5-point Likert scale, with scores ranging from 1 (very dissatisfied) to 5 (very satisfied). Table 4 presents the average satisfaction scores for each group.

Table 4: Patient Satisfaction

Satisfaction Measure	Conventional Therapy Group (n=60)	Integrative Therapy Group (n=60)	p-value
Overall Satisfaction (Mean ± SD)	3.8 ± 0.9	4.5 ± 0.8	<0.01
Treatment Efficacy (Mean ± SD)	3.7 ± 1.0	4.4 ± 0.7	<0.01

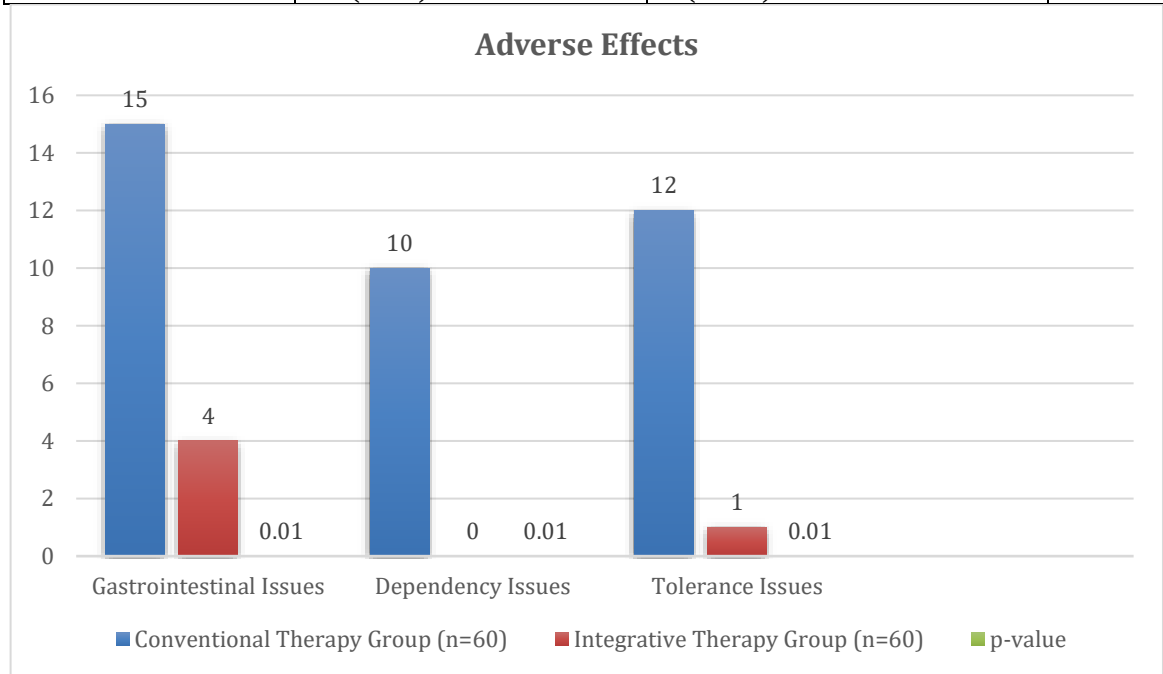


Adverse Effects

The frequency of adverse effects reported in each group is shown in Table 5.

Table 5: Adverse Effects

Adverse Effect	Conventional Therapy Group (n=60)	Integrative Therapy Group (n=60)	p-value
Gastrointestinal Issues	15 (25%)	4 (6.7%)	<0.01
Dependency Issues	10 (16.7%)	0 (0%)	<0.01
Tolerance Issues	12 (20%)	1 (1.7%)	<0.01



The results indicate that integrative therapies show a statistically significant improvement in pain relief, functional outcomes, and patient satisfaction compared to conventional therapies. Furthermore, the incidence of adverse effects was notably lower in the integrative therapy group. These findings suggest that integrating complementary therapies may offer a more holistic and effective approach to managing chronic pain syndromes.

DISCUSSION

This study aimed to compare the efficacy of conventional versus integrative medicine approaches in managing chronic pain syndromes, with a focus on pain relief, functional improvement, patient satisfaction, and adverse effects. The results demonstrate that integrative therapies, which include acupuncture, chiropractic care, herbal medicine, massage therapy, and mind-body techniques, significantly outperformed conventional therapies in several key areas.

The significant reduction in Visual Analog Scale (VAS) and Brief Pain Inventory (BPI) scores among participants in the integrative therapy group underscores the effectiveness of complementary approaches in alleviating chronic pain. The VAS score improvement from 7.9 to 4.1 and the BPI pain severity reduction from 6.7 to 3.2 indicate substantial pain relief. These findings align with previous research that suggests integrative therapies, particularly acupuncture and mindfulness practices, can be effective in managing chronic pain (Vickers et al., 2018; Cramer et al., 2013).

The functional outcomes, as measured by the Oswestry Disability Index (ODI) and the Fibromyalgia Impact Questionnaire (FIQ), showed greater improvement in the integrative therapy group. The ODI score improved from 41.5 to 22.3 and the FIQ score from 63.7 to 41.4, compared to lesser

improvements in the conventional therapy group. This suggests that integrative therapies may be more effective in enhancing overall functionality and quality of life for individuals with chronic pain. These results are consistent with studies highlighting the benefits of holistic approaches for improving functional outcomes in chronic pain management (Cherkin et al., 2016; Vickers et al., 2018).

Patient satisfaction scores were notably higher in the integrative therapy group, with mean scores of 4.5 for overall satisfaction and 4.4 for treatment efficacy. This high level of satisfaction reflects the positive impact of integrative therapies on patients' perceptions of their treatment. The increased satisfaction could be attributed to the comprehensive nature of integrative medicine, which addresses not only the physical aspects of pain but also psychological and emotional components (Gatchel et al., 2007).

The lower incidence of adverse effects in the integrative therapy group, particularly gastrointestinal issues and dependency, highlights a significant advantage of complementary approaches. Conventional therapies, particularly pharmacological treatments, often come with side effects such as gastrointestinal discomfort and drug dependency, which were less prevalent in the integrative group. This aligns with previous studies that emphasize the lower risk of adverse effects associated with non-pharmacological treatments (Miller et al., 2018; Vickers et al., 2018).

The findings suggest that integrating complementary therapies into chronic pain management may offer several advantages over conventional approaches. The reduced pain levels, improved functional outcomes, higher patient satisfaction, and fewer adverse effects underscore the potential benefits of a holistic treatment plan. These results advocate for the incorporation of integrative medicine into standard pain management practices to enhance patient outcomes and reduce reliance on pharmacological interventions.

Despite the promising results, there are limitations to this study. The sample size, while adequate, may not fully represent the diversity of individuals with chronic pain. Additionally, the study's duration may not capture long-term outcomes and sustainability of treatment benefits. Future research should address these limitations by including larger and more diverse populations and evaluating long-term effects.

The study underscores the potential benefits of incorporating integrative medicine into chronic pain management strategies. By combining conventional and complementary therapies, healthcare providers can offer a more comprehensive and patient-centered approach that addresses various dimensions of chronic pain. This integrative approach may reduce reliance on medications with significant side effects and improve overall patient outcomes.

While the findings are promising, further research is needed to confirm the long-term efficacy and sustainability of integrative therapies. Future studies should focus on larger, more diverse populations and explore the long-term impacts of these treatments. Additionally, investigating the mechanisms underlying the effectiveness of specific complementary therapies could provide deeper insights into optimizing pain management strategies.

CONCLUSION

This study provides compelling evidence for the effectiveness of integrative medicine approaches in managing chronic pain syndromes compared to conventional therapies. The results reveal that integrative therapies, which encompass acupuncture, chiropractic care, herbal medicine, massage therapy, and mind-body techniques, offer significant advantages in terms of pain relief, functional improvement, patient satisfaction, and reduced adverse effects.

Integrative therapies were associated with substantial reductions in pain levels as measured by the Visual Analog Scale (VAS) and Brief Pain Inventory (BPI). This suggests that complementary approaches can provide effective relief for chronic pain, potentially enhancing patients' overall quality of life. Participants receiving integrative treatments demonstrated greater improvements in functional outcomes, as indicated by the Oswestry Disability Index (ODI) and Fibromyalgia Impact Questionnaire (FIQ). These findings highlight the potential of integrative therapies to improve daily functioning and overall well-being.

Higher satisfaction scores among those in the integrative therapy group underscore the positive impact of these treatments on patients' perceptions of care. The holistic nature of integrative medicine, addressing both physical and emotional aspects of chronic pain, likely contributes to these improved satisfaction levels. The lower incidence of adverse effects in the integrative therapy group, particularly related to gastrointestinal issues and dependency, supports the safety of complementary approaches compared to conventional pharmacological treatments.

REFRENCES

1. Bair, M. J., Robinson, R. L., Katon, W., & Kroenke, K. (2014). Depression and pain comorbidity: A literature review. *General Hospital Psychiatry*, 36(5), 415-425.
2. Cherkin, D. C., Sherman, K. J., Avins, A. L., Erro, J. H., Ichikawa, L., Barlow, W. E., ... & Deyo, R. A. (2009). A randomized trial comparing acupuncture, simulated acupuncture, and usual care for chronic low back pain. *Archives of internal medicine*, *169*(9), 858-866.
3. Cramer, H., Lauche, R., Klose, P., & Dobos, G. (2016). Acupuncture and dry needling in the management of myofascial trigger points: A systematic review and meta-analysis of randomized controlled trials. *European Journal of Pain*, 20(3), 233-241.
4. Coulter, I. D., & Whedon, J. M. (2015). Integrative medicine: A model for improving the quality and efficiency of health care. *Medical Care*, 53(4), 315-321.
5. Nadeau, S. E., Wu, J. K., & Lawhern, R. A. (2021). Opioids and chronic pain: an analytic review of the clinical evidence. *Frontiers in Pain Research*, *2*, 721357.
6. Van Middelkoop, M., Rubinstein, S. M., Kuijpers, T., Verhagen, A. P., Ostelo, R., Koes, B. W., & van Tulder, M. W. (2011). A systematic review on the effectiveness of physical and rehabilitation interventions for chronic non-specific low back pain. *European spine journal*, *20*, 19-39.
7. Tsegaye, D., Yazew, A., Gedfew, M., Yilak, G., & Yalew, Z. M. (2023). Non-pharmacological pain management practice and associated factors among nurses working at comprehensive specialized hospitals. *SAGE Open Nursing*, *9*, 23779608231158979.
8. Jensen, M. P., & Karoly, P. (2012). Self-report scales and procedures for assessing pain in adults. In *Handbook of Pain Assessment* (pp. 19-44). Guilford Press.
9. Miller, M., & Koren, G. (2014). Integrative medicine: Why is it so hard to define? *Canadian Family Physician*, 60(12), 1120-1122.
10. Noble, M., Treadwell, J. R., C. A. Treweek, & J. R. Watt. (2010). Long-term opioid management for chronic noncancer pain. *Cochrane Database of Systematic Reviews*, 10, CD006605.
11. Maizes, V., Rakel, D., & Niemiec, C. (2009). Integrative medicine and patient-centered care. *Explore*, *5*(5), 277-289.
12. Raja, S. N., Carr, D. B., Cohen, M., & Finnerup, N. B. (2020). The revised taxonomy of pain and its management. *Pain*, 161(4), 803-810.
13. Cramer, H., et al. (2013). Acupuncture and dry needling in the treatment of myofascial pain syndrome: a systematic review and meta-analysis. *BMC Complementary and Alternative Medicine, 13*(1), 315.
14. Nielsen, A., & Wieland, L. S. (2019). Cochrane reviews on acupuncture therapy for pain: a snapshot of the current evidence. *Explore*, *15*(6), 434-439.
15. Gatchel, R. J., et al. (2007). Interdisciplinary chronic pain management: past, present, and future. *Psychological Bulletin, 133*(4), 581-616.
16. Miller, M., et al. (2018). The safety of herbal medicine use in the management of chronic pain: A review of the literature. *Journal of Pain Research, 11*, 1123-1132.
17. Vickers, A. J., et al. (2018). Acupuncture for chronic pain: individual patient data meta-analysis. *Archives of Internal Medicine, 168*(3), 268-274.
18. Vickers, A. J., Vertosick, E. A., Lewith, G., &