



## **A MULTIDISCIPLINARY APPROACH TO ACUTE INJURY MANAGEMENT: A JOINT STUDY BETWEEN NURSES, SOCIAL WORKERS AND EMERGENCY TECHNICIANS - A SYSTEMATIC REVIEW OF LITERATURE**

**Dkeel Hmoud A. Almuraikhi<sup>1\*</sup>, Ahmed Nafea Salem Alanazi<sup>2</sup>, Tammani Khumaykhim  
Ghanim Alenezi<sup>3</sup>, Saeed Jazi Shulawih Alanazi<sup>4</sup>, Fatma Mohammed Sh Alenezi<sup>5</sup>, Tahreer  
Mohammed Sh Alenezi<sup>6</sup>, Asma Mudhy Sulaiman Alharby<sup>7</sup>, Nashmiah Fadhel Rashed  
Aldhafeeri<sup>8</sup>, Luluh Saud Khulaif Aldhafeeri<sup>9</sup>, Latifah Mohammed Sh Alanazi<sup>10</sup>**

### **Abstract**

Chronic pain is a significant and costly problem all over the world. Despite significant progress in identifying the best treatment approaches, there are still significant obstacles that must be overcome in order for the treatment to be truly beneficial. There is evidence to support the cost-effectiveness of interdisciplinary treatment programs for patients with chronic pain. Creating an interdisciplinary service is not easy and certainly is much more complicated than simply placing different services in one clinic. However, when such interdisciplinary programs are instituted, they increase the effectiveness of chronic pain management significantly; bring satisfaction to doctors and are economically attractive (interdisciplinary treatment programs for patients suffering from pain not only provide the best clinical treatment, but are also the most cost-effective in the long run).

**Key words:** multidisciplinary, pain management, pain model, chronic pain, cost effective pain management

<sup>1</sup>\*Ambulance and emergency medicine technician, Qassim - Al-Asyah General Hospital

<sup>2</sup>Emergency medical services, Assistance management of health crises and disasters, Arar

<sup>3</sup>Nursing technician, North medical Tower, Arar

<sup>4</sup>Healthy Assistant, Al-Sha'bah Hospital, The northern border in Arar

<sup>5</sup>Technician Nursing, Mohammedia Health Centre, the northern border is Arar

<sup>6</sup>Technician Nursing, maternity & pediatric hospital, maternity & pediatric hospital. The northern border is Arar

<sup>7</sup>Technician Nursing, Department of Statistics for Health Care, Primary Health Care in Hafer Albaten

<sup>8</sup>Technician Nursing, Al Faisaliah Health Center, Hafer Albaten

<sup>9</sup>Specialist-Sociology, King Khaled General Hospital, Hafer Albaten

<sup>10</sup>Technician Nursing, King Khaled General Hospital, Hafer Albaten

**\*Corresponding Author:** Dkeel Hmoud A. Almuraikhi

\*Ambulance and emergency medicine technician, Qassim - Al-Asyah General Hospital

**DOI:** 10.53555/ecb/2022.11.10.167

## **Introduction**

Millions of people worldwide suffer from chronic pain, which significantly contributes to morbidity, mortality, and disability, with its prevalence increasing each year. Chronic pain not only inflicts substantial economic costs on healthcare systems, but it also profoundly affects patients' quality of life and daily functioning [1]. Long-term clinical practice has shown that traditional "biomedical" approaches to managing chronic pain, such as the use of NSAIDs, antidepressants, anticonvulsants, opioids, surgical interventions, and various forms of stimulation, often fail to provide long-lasting relief or may expose patients to potential risks. This underlines the necessity for exploring alternative approaches to chronic pain management.

Hospital-based multidisciplinary teams typically consist of a wide range of healthcare professionals at different levels of the care pyramid, including aides, nurses, physician assistants, social workers, anesthesiologists, and attending physicians. These collaborative teams consistently outperform approaches that rely on randomly assigning staff to emergency rooms, providing more effective and coordinated care [2].

In the context of acute injury management, a multidisciplinary approach encompasses the collaboration of various healthcare professionals, each bringing their specialized skills and perspectives to offer comprehensive patient care. For instance, a joint study between a nurse, a social worker, and an emergency technician can delve into several critical areas of patient care. These areas include effective clinical management, addressing patients' psychosocial needs, and efficiently coordinating resources for patient recovery [3].

Based on previous studies, we note that this approach fosters a holistic view of patient care, ensuring that patients receive not only medical attention but also emotional support and assistance with navigating the healthcare system. Such a collaborative strategy optimizes patient outcomes and enhances the overall care experience, highlighting the importance of interdisciplinary teams in the treatment of both chronic pain and acute injuries.

## **Multidisciplinary programs for patients with pain**

Interdisciplinary pain management is a comprehensive and holistic approach to treating chronic pain that leverages the expertise of various healthcare professionals. This method recognizes the multifaceted nature of chronic pain, which involves the interplay of biological, psychological, and social factors. By considering all these aspects,

interdisciplinary pain management offers a more thorough and effective approach to care [4]. At the heart of interdisciplinary pain management is patient-centered care, which prioritizes the unique needs, experiences, and goals of each patient. This approach encourages active patient participation in their own care, involving them in the decision-making process and supporting them in setting realistic goals for their treatment journey. By empowering patients, interdisciplinary care fosters a sense of ownership and responsibility for their health, which can lead to better adherence to treatment plans and improved outcomes [5].

The biopsychosocial model serves as a guiding framework for interdisciplinary pain management, recognizing that chronic pain is influenced by various interconnected factors beyond just biological causes. This model calls for a collaborative effort among a diverse team of specialists, including physicians, nurses, psychologists, physical and occupational therapists, social workers, and other healthcare professionals. By bringing together this range of expertise, an interdisciplinary team can conduct a comprehensive assessment of each patient's condition and develop a personalized treatment plan that addresses all aspects of their pain [6].

Through this integrative approach, patients receive tailored care that encompasses physical rehabilitation, psychological support, and social resources. This comprehensive care strategy not only aims to alleviate pain but also seeks to improve the patient's overall quality of life by addressing the broader impact of chronic pain on their well-being [5]. Interdisciplinary pain management stands as a patient-focused, evidence-based approach that can lead to more sustainable and long-lasting relief for individuals living with chronic pain. Comprehensive assessment is a key principle of this approach, involving thorough evaluation of the patient's medical history, pain condition, and psychosocial factors. Treatment plans are then individualized to meet the specific needs and circumstances of each patient [7]. This may include a mix of pharmacological and non-pharmacological interventions such as physical therapy, cognitive-behavioral therapy, and complementary and alternative medicine approaches.

Education and empowerment play a central role in interdisciplinary pain management by providing patients and their families with the knowledge and skills they need to effectively manage chronic pain. Through patient education, individuals gain a better understanding of pain management strategies, coping mechanisms, and the complex nature of

chronic pain. This information helps patients set realistic expectations for their treatment and outcomes [8]. By equipping patients with this knowledge, healthcare providers empower them to take an active role in their care and self-management. Patients can make informed decisions about their treatment plans, actively participate in goal setting, and apply coping techniques to improve their quality of life. Additionally, empowering patients fosters a sense of control over their pain and encourages adherence to treatment plans, ultimately leading to better outcomes and greater satisfaction with their care. Regular monitoring and evaluation are essential for tracking the effectiveness of treatment and making adjustments as needed. Coordination of care ensures seamless communication among team members and across healthcare settings. By focusing on outcomes such as pain reduction, improved function, and quality of life, interdisciplinary pain management prioritizes the overall well-being of patients [9].

### **Roles of the Multidisciplinary Team**

In the context of healthcare, discharge planning is the process of preparing a patient to leave the hospital and continue their recovery or manage their condition outside of an inpatient setting. This planning requires the input and collaboration of a multidisciplinary team (MDT) of healthcare professionals, each bringing their unique skills and expertise to the table. The goal is to create a comprehensive, individualized plan that addresses all aspects of a patient's care needs, including medical, psychological, social, and practical concerns [10].

Based on previous studies, we note that each discipline within the MDT—such as physicians, nurses, social workers, physical therapists, and occupational therapists—has a distinct scope of practice and specific skills that contribute to the discharge planning process. For example, nurses may focus on patient education and medication management, while social workers may assist with community resources and support systems. Physical and occupational therapists work on functional rehabilitation and home modifications. Given the diversity of skills and potential overlap in roles, clear communication, organization, and transparency within the MDT are vital to coordinate care effectively. This ensures that each team member understands their responsibilities and the contributions of others, leading to a cohesive approach to planning the patient's transition from the hospital to their home or another care setting.

By maintaining open lines of communication and a well-organized plan, the MDT can minimize the risk of misunderstandings or gaps in care, which can negatively impact patient outcomes. Effective discharge planning promotes continuity of care, reduces the likelihood of readmissions, and enhances the patient's overall experience and quality of life. Therefore, fostering collaboration and clear communication among the MDT is key to successful discharge planning and achieving the best possible outcomes for the patient. [10].

#### **1. The nurse:**

- **Clinical Management:** The nurse is responsible for assessing and managing the clinical needs of the patient, including administering medications, monitoring vital signs, and performing wound care or other necessary treatments.
- **Patient Education:** Nurses can provide education to patients and their families about the injury, treatment plan, and aftercare instructions.
- **Care Coordination:** The nurse plays a pivotal role in coordinating care among the health care team and ensuring continuity of care during the patient's treatment [11].

#### **2. Social worker:**

- **Psychological and social support:** The social worker assesses the patient's psychological and social needs, provides counseling and support to the patient and his family, and treats emotional or psychological disorders related to the injury.
- **Resource coordination:** Social workers help patients access community resources such as transportation, financial assistance, or support groups to aid in recovery and rehabilitation.
- **Discharge Planning:** They participate in patient discharge planning, including arranging home care services, follow-up appointments, or rehabilitation facilities [9; 12].

#### **3. Emergency technician:**

- **Initial Evaluation and Stabilization:** Emergency technicians play a critical role in the initial evaluation and stabilization of a patient's condition, ensuring they receive immediate and appropriate care.
- **Transport and Transfer:** They manage the safe transport and transfer of patients, both within the hospital (to imaging or other departments) and between healthcare facilities.
- **Equipment and Safety:** Emergency technicians are responsible for using and maintaining medical equipment safely and effectively while responding to emergency situations [13].

By jointly examining a nurse, social worker, and emergency technician, the team can provide comprehensive, coordinated care for patients with acute injuries. This collaborative approach can lead to improved patient outcomes, enhanced patient and family satisfaction, and more efficient use of health care resources.

### **Treatment effectiveness and cost-effectiveness of multidisciplinary programs for patients with pain**

The efficacy and cost-effectiveness of interdisciplinary pain management programs are well-documented in scientific literature [14]. For instance, [3] classified interdisciplinary approaches to lumbar pain treatment as a "strong" recommendation based on "high" quality evidence. Oslund et al. examined the long-term effectiveness of interdisciplinary treatment programs for patients with pain and found sustained improvement in several evaluation indicators, such as pain severity and functional impairment, over the course of a year [15].

In addition, Scascighini et al. reported that interdisciplinary pain management programs outperformed standard pain relief methods and less coordinated multidisciplinary approaches [16]. Interdisciplinary approaches to chronic lumbar pain were generally more effective than traditional pain relief methods, including pharmacotherapy and cognitive-behavioral therapy [17]. Although the average monthly cost of treating chronic pain was similar in general and specialized clinics, patients treated in specialized chronic pain clinics were less likely to seek emergency and primary care, and they used fewer pain medications [18]. So, patients who received cognitive-behavioral therapy (CBT) with the involvement of different specialists spent significantly less time on sick leave in the year following treatment initiation compared to those treated in general medical settings [19].

Selecting the most cost-effective treatment options for chronic pain, rather than just the least expensive ones, can lead to substantial long-term cost savings while also greatly improving patients' quality of life [20]. Cost-effective treatments focus on providing the most benefit in terms of patient outcomes and overall well-being, even if the initial investment is higher [21]. This approach ultimately reduces healthcare expenses over time by minimizing the need for ongoing interventions, hospitalizations, and complications. Demonstrated the significant impact of cognitive-behavioral therapy (CBT) on various psychosocial aspects of chronic pain

management. CBT was shown to improve patients' ability to cope with pain, modify their behavior, and enhance their social functioning [22]. These improvements can lead to a better quality of life for patients dealing with chronic pain.

CBT targets specific cognitive areas that may exacerbate chronic pain symptoms, such as catastrophic thinking, fear of harm that leads to avoidance of physical activity, and the expectation of pharmacological treatments as the primary solution [23] By addressing these cognitive distortions, CBT helps patients develop healthier and more adaptive thought patterns. In addition to cognitive restructuring, CBT encompasses a range of techniques to manage chronic pain. These methods include relaxation training, which helps reduce muscle tension and stress; attention control, which aids in redirecting focus away from pain; motivational counseling, which encourages patients to set and pursue meaningful goals; and activity management training, which supports a gradual increase in physical activity to improve function and overall well-being. Overall, CBT offers a comprehensive approach to managing chronic pain that addresses both the physical and psychological aspects of the condition, leading to improved patient outcomes and long-term cost savings.

Controlled clinical trials in the context of interdisciplinary treatment for chronic pain patients highlighted the successful use of such treatments to help patients manage their condition [24]. A review by [13] further corroborated the effectiveness of CBT in treating chronic pain. Group CBT is also recognized as an essential approach to pain treatment.

Previous studies have demonstrated the effectiveness and cost-effectiveness of multidisciplinary programs for patients with pain. These programs bring together a range of healthcare professionals such as physicians, nurses, physical therapists, and psychologists to create comprehensive, tailored treatment plans that address the complex, multifaceted nature of pain. Patients benefit from improved outcomes, such as reduced pain intensity and enhanced quality of life, while healthcare systems see decreased utilization of services like emergency room visits and hospitalizations, leading to long-term cost savings. The focus on patient-centered care and evidence-based practice results in higher patient satisfaction and adherence to treatment plans, making multidisciplinary programs a best practice in pain management.

## **Barriers to introducing interdisciplinary pain management programs**

Introducing interdisciplinary pain management programs in Arab countries can be challenging due to several cultural, institutional, and systemic barriers. Here are some of the main obstacles to implementing these programs in the region [20]; [23]; [25]:

### **1. Cultural Attitudes and Stigmas:**

- There may be cultural perceptions and stigmas surrounding pain and its treatment. Some patients might view chronic pain as a condition to endure silently rather than seeking comprehensive care.
- Mental health issues often carry a stigma in many Arab countries, which can impact the willingness of patients to engage in interdisciplinary pain management programs that include psychological components.

### **2. Lack of Awareness and Education:**

- Many healthcare providers and patients may not be fully aware of the benefits and effectiveness of interdisciplinary pain management programs.
- Education and training for healthcare professionals in interdisciplinary approaches to pain management may be limited.

### **3. Insurance Coverage and Reimbursement Policies:**

- Insurance companies may not fully cover the costs of interdisciplinary pain management programs, preferring to stick with traditional treatments to control expenses.
- The absence of comprehensive insurance policies that include coverage for multidisciplinary treatments can limit patient access to these programs.

### **4. Healthcare Infrastructure and Resources:**

- The availability of multidisciplinary teams and specialized pain clinics can be limited, particularly in rural or underserved areas.
- A lack of adequate resources such as equipment, facilities, and trained personnel can impede the development and implementation of interdisciplinary programs.

### **5. Regulatory and Policy Challenges:**

- There may be insufficient regulatory frameworks or guidelines for implementing interdisciplinary pain management programs.
- Inconsistencies in healthcare policies across different Arab countries can create challenges for standardizing approaches and ensuring quality care.

### **6. Resistance to Change:**

- Healthcare systems in some Arab countries may be slow to adopt new practices and interventions

due to resistance to change or skepticism about their efficacy.

- Existing hierarchies and silos within healthcare organizations can make interdisciplinary collaboration more difficult.

### **7. Communication and Coordination Challenges:**

- Effective interdisciplinary care requires strong communication and coordination among different specialists. Language and cultural barriers may affect the efficacy of such collaboration.
- Developing and maintaining cohesive interdisciplinary teams may be challenging without clear protocols and established channels of communication.

### **8. Limited Research and Data:**

- A lack of local research and data on the effectiveness of interdisciplinary pain management programs can hinder the case for their widespread adoption.
- More studies and evidence from within the region are needed to convince healthcare policymakers and practitioners of the benefits.

To overcome these barriers, efforts should focus on education and training for healthcare professionals, raising awareness about the benefits of interdisciplinary pain management among patients and policymakers, and advocating for insurance coverage and policy changes that support comprehensive care. Additionally, fostering collaboration between different healthcare disciplines and promoting local research on pain management can help pave the way for successful implementation of interdisciplinary programs in Arab countries.

## **Conclusion**

Chronic pain is a widespread and costly problem worldwide. Despite progress in identifying effective treatment approaches, significant challenges remain in making these treatments widely available and truly beneficial. Evidence supports the cost-effectiveness of multidisciplinary treatment programs for patients with chronic pain. However, detailed analyzes of direct and indirect cost savings are limited in the literature. Providing more comprehensive data on cost savings can facilitate the development of effective and sustainable pain relief programs and enable insurance companies to better understand the value of supporting these programs.

Creating multidisciplinary services goes beyond simply bringing together different services in one clinic; It requires the integration of diverse

disciplines to work collaboratively. Although creating multidisciplinary programs is complex, their implementation can significantly enhance the effectiveness of chronic pain management and lead to long-term cost savings. As such, focused efforts on expanding multidisciplinary pain management programs hold the potential to improve patient outcomes and promote more efficient use of health care resources.

## References

1. Gatchel, R. J., Peng, Y., Peters, M. L., Fuchs, P. N., & Turk, D. C. (2007). The biopsychosocial approach to chronic pain: Scientific advances and future directions. *Psychological Bulletin*, 133, 581–624. doi:10.1037/0033-2909.133.4.581
2. Epstein NE. Multidisciplinary in-hospital teams improve patient outcomes: A review. *Surg Neurol Int* 2014;5:S295-303. Available FREE in open access from: <http://www.surgicalneurologyint.com/text.asp?2014/5/8/295/139612>
3. Chou, R., Loeser, J. D., Owens, D. K., Rosenquist, R. W., Atlas, S. J., Baisden, J., . . . American Pain Society Low Back Pain Guideline Panel. (2009). Interventional therapies, surgery, and interdisciplinary rehabilitation for low back pain: An evidence-based clinical practice guideline from the American Pain Society. *Spine*, 34(10), 1066–1077. doi:10.1097/BRS.0b013e3181a1390d
4. Scott JK, Leary SD, Ness AR, Sandy JR, Persson M, Kilpatrick N, et al. Centralization of services for children born with orofacial clefts in the United Kingdom: A cross-sectional survey. *Cleft Palate Craniofac J* 2014 Feb 7
5. Braš M, Đorđević V, Janjanin M. Person-centered pain management - science and art. *Croat Med J*. 2013 Jun;54(3):296-300. doi: 10.3325/cmj.2013.54.296. PMID: 23771762; PMCID: PMC3692339.
6. Snaedal J. Components of person-centered medicine in medical treatment and care. *Int J Pers Cent Med*. 2012;21:29–32.
7. Dordević V, Bras M, Brajkovic L. Person-centered medical interview. *Croat Med J*. 2012;53:310–3. doi: 10.3325/cmj.2012.53.310.
8. Dordevic V, Bras M, Milunovic V, Brajkovic L, Stevanovic R. The founding of the Centre for Palliative Medicine, Medical Ethics and Communication Skills: a new step toward the development of patient oriented medicine in Croatia. *Croat Med J*. 2011;52:87–8. doi: 10.3325/cmj.2011.52.87
9. Ektor-Andersen, J., Ingvarsson, E., Kullendorf, M., & Obraek, P. (2008). High cost-benefit of early team-based biomedical and cognitive-behaviour intervention for long-term pain-related sickness absence. *Journal of Rehabilitation Medicine*, 40, 1–8. doi:10.2340/16501977-0127
10. Gatchel R.J. et al. Interdisciplinary Chronic Pain Management. *American Psychologist* 119. February–March 2014, Vol. 69, No. 2, 119–130
11. Gatchel, R. J., & Mayer, T. G. (2008). Evidence-based review of the effectiveness of functional restoration for the management of chronic low back pain. *The Spine Journal*, 8, 65–69.
12. Gatchel, R. J., & Okifuji, A. (2006). Evidence-based scientific data documenting the treatment and cost-effectiveness of comprehensive pain programs for chronic nonmalignant pain. *The Journal of Pain*, 7(11), 779–793.
13. Gatchel, R. J., & Rollings, K. H. (2008). Evidence-based review of the efficacy of cognitive-behavioral therapy for the treatment of chronic low back pain. *The Spine Journal*, 8, 40–44.
14. Turk, D. C., & Monarch, E. S. (2002). Biopsychosocial perspective on chronic pain. In D. C. Turk & R. J. Gatchel (Eds.), *Psychological approaches to pain management: A practitioner's handbook* (2nd ed., pp. 3–29). New York, NY: Guilford Press.
15. Oslund, S., Robinson, R. C., Clark, T. C., Garofalo, J. P., Behnk, P., Walker, B., Noe, C. E. (2009). Long-term effectiveness of a comprehensive pain management program: Strengthening the case for interdisciplinary care. *Proceedings (Baylor University Medical Center)*, 22(3), 211–214.
16. Scascighini, L., Toma, V., Dober-Spielmann, S., & Sprott, H. (2008). Multidisciplinary treatment for chronic pain: A systematic review of interventions and outcomes. *Rheumatology*, 47(5), 670–678.
17. Weiner, S. S., & Nordin, M. (2010). Prevention and management of chronic back pain. *Best Practice & Research Clinical Rheumatology*, 24(2), 267–279.
18. Keefe, F. J., Rumble, M. E., Scipio, C. D., Giordano, L. A., & Perri, L. M. (2004). Psychological aspects of persistent pain: Current state of the science. *The Journal of Pain*, 5, 195–211.

19. O'Connor, A. B. (2009). Neuropathic pain: Quality-of-life impact, costs and cost effectiveness of therapy. *Pharmacoeconomics*, 27, 95–112.
20. Rodríguez, M. J., & García, A. J. (2007). A registry of the aetiology and costs of neuropathic pain in pain clinics: Results of the Registry of Aetiologies and Costs (REC) in Neuropathic Pain Disorders Study. *Clinical Drug Investigation*, 27(11), 771–782.
21. Rothman, A. A., & Wagner, E. H. (2003). Chronic illness management What is the role of primary care? *Annals of Internal Medicine*, 138,256–261.
22. Turk, D. C., & Swanson, K. (2007). Efficacy and cost-effectiveness treatment of chronic pain: An analysis and evidence-based synthesis. In M. E. Schatman & A. Campbell (Eds.), *Chronic pain management: Guidelines for multidisciplinary program development* (pp. 15–38). New York, NY: Informa Healthcare.
23. Vowles, K. E., McCracken, L. M., & Eccleston, C. (2007). Processes of change in treatment for chronic pain: The contributions of pain, acceptance, and catastrophizing. *European Journal of Pain*, 11(7), 779–787.
24. McCracken, L. M., & Turk, D. C. (2002). Behavioral and cognitivebehavioral treatment for chronic pain: Outcome, predictors of outcome, and treatment. *Spine*, 27, 2564 – 2573.
25. Morley, S., Eccleston, C., & Williams, A. (1999). Systematic review and meta-analysis of randomized controlled trials of cognitive behavior therapy and behavior therapy for chronic pain in adults, excluding headache. *Pain*, 80, 1–13.
26. Taberna M, Gil Moncayo F, Jané-Salas E, Antonio M, Arribas L, Vilajosana E, Peralvez Torres E, Mesía R. The Multidisciplinary Team (MDT) Approach and Quality of Care. *Front Oncol.* 2020 Mar 20;10:85. doi: 10.3389/fonc.2020.00085. PMID: 32266126; PMCID: PMC7100151.