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# Supporting Adults with Chronic Pain Through the Use of a Non-opioid Pain Management Program

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## Focus question

How do adults with chronic pain perceive their pain levels when managing the adverse effects of pain through non-opioid interventions to support the IADL of health management and maintenance?

## Clinical Scenario

Chronic pain is experienced by 20.4% of adults in the United States. It is one of the most common reasons that adults seek medical attention and is linked to restrictions in mobility and daily activities (Dahlhamer et al., 2016). The incidences of anxiety and depression, perceived poor health, reduced quality of life, and dependence on opioids are common with chronic pain (Dahlhamer et al., 2016). This type of pain is described as pain experienced every day for three to six months or more (Pitcher, Von Korff, Bushnell, & Porter, 2001). Chronic pain includes headaches, pain from the lower back, cancer, arthritis, and neurogenic and psychogenic pain (Dahlhamer et al., 2016). This experience of pain has been linked to numerous physical and mental conditions and contributes to high healthcare costs and lost productivity.

Chronic pain interferes with one's ability to engage in occupations and reduces their quality of life. The standard treatment for chronic pain is the use of opioids; in the United States, 3-4% of adults are prescribed long-term opioid therapy (Dowell, Haegerich, & Chou, 2016). One serious concern is that the prescription of opioids can lead to dependence and misuse. Prescription misuse has tripled since 1990 in the United States and is a significant concern (Ling, Mooney, & Hillhouse, 2011). The statistic suggests that opioid misuse is continually rising and will be a continuing issue regarding chronic pain management.

It is essential to manage chronic pain because it is a complex cyclical biopsychosocial condition that affects multiple aspects of life, and the occurrence of these symptoms promote

additional or worsening chronic pain (Schwan, Sclafani, & Tawfik, 2019). Some aspects of life that can be affected by chronic pain include sleep, emotions, mood, and both cognitive and physical functioning (Schwan et al., 2019). It is pertinent for occupational therapy practitioners to develop alternative intervention methods that involve non-opioid approaches. According to the Center for Disease Control (CDC), non-opioid therapy is the preferred method for the treatment of chronic pain (Dowell, Haegerich, & Chou, 2016).

Non-opioid pain management approaches are needed to help support chronic pain management. The approaches include multimodal interventions, pain education, and various interdisciplinary teams. Multimodal interventions for the treatment of chronic pain have been gathered from the literature; according to the Mirriam-Webster dictionary, multimodal is the involvement of several modes or modalities (Mirriam-Webster, n.d.). In healthcare, multimodal means that multiple modes of intervention are used during a course of treatment. In this paper, modality and intervention are used interchangeably. An additional approach is pain education. Pain education involves the development of coping mechanisms, increased awareness of pain levels throughout the day, and changes in lifestyle to support engagement in life activities. Interdisciplinary teams involve a greater overlapping of professional roles, communication between team members, and shared problem solving for the good of the client (James & Walter, 2015).

According to the American Occupational Therapy Association (AOTA, 2014), instrumental activities of daily living (IADLs) are activities that aid in daily life both in the home and the community. Health management and maintenance is a category included under the occupation of IADLs and involves “developing, managing, and maintaining routines for health and wellness promotion, such as physical fitness, nutrition, decreased health risk behaviors, and

medication routines" (AOTA, 2014, p. S19). An occupational therapy intervention can support IADLs through a direct focus on improving health management and maintenance. This approach can be a safer option for managing chronic pain compared to opioid use.

## Purpose Statement

There is a necessity for client-centered pain management care in order to reduce the persistent need for opioids. The American Occupational Therapy Foundation suggests that applying the unique expertise of occupational therapy is valuable for the prevention and management of chronic pain (Ross, 2018). Occupational therapy serves as the gap between the use of opioids for chronic pain management and the use of client-centered lifestyle interventions. The aim is to assist occupational therapy practitioners in discovering the best evidence-based, non-opioid interventions for the treatment of chronic pain.

## Summary of Key Findings

Three level III quantitative studies and one qualitative study included in this review reported on different types of non-opioid interventions to support people with chronic pain symptoms for the performance of IADLs. The first study by Simon and Collins (2017) had 45 participants who completed a chronic pain management program known as Lifestyle Redesign®. The study had an evidence level of IVA2b, indicating that the study was a single-subject design that included pre- and post-treatment scores with moderate internal and external validity. Results showed improvement in quality of life (QOL), self-efficacy, and functional abilities of people living with chronic pain through the Lifestyle Redesign® intervention. The second study by Kurklinsky, Perez, Lacayo, and Sletten (2016) recruited 132 participants who were a part of a Comprehensive Pain Rehabilitation Center (PRC) program. The study had an evidence level of IVA2b, indicating that the study was a non-experimental, single-subject design with moderate

internal and external validity. Their findings showed an improvement in functional abilities and self-efficacy through their interdisciplinary intervention approach. Validity and reliability is discussed at the end of the literature review.

The third study by Oslund et al. (2009) utilized 108 participants with chronic pain who completed a comprehensive pain program. This study was a single-subject design with an evidence level of IVA2b and moderate internal and external validity. Their findings showed decreases in pain severity, hours resting, and emotional distress through their interdisciplinary team approach. The fourth study was a phenomenological qualitative study design by Scott-Dempster, Toye, and Baker (2017), which included eight participants with chronic pain who used activity pacing in a pain management program. The study found that through activity pacing, patients can be more mindful and present while participating in meaningful activities. The qualitative results give insight into the patients' experiences and found that activity pacing is a beneficial strategy for patients with chronic pain to modify their activity. From the four articles, information supporting non-opioid management for chronic pain included multimodal interventions, pain education, and occupational therapy interventions.

A multimodal approach was used by Kurklinsky et al. (2016), Oslund et al. (2009), Scott-Dempster et al. (2017), and Simon and Collins (2017) for chronic pain management. Simon and Collins (2017) used an occupational therapy approach, which included a didactic presentation, peer exchange, direct experience, and personal exploration. The study concluded that this multimodal approach had successful results because clients experienced improved self-efficacy and quality of life. In addition, Kurklinsky et al. (2016) used an interdisciplinary approach by incorporating interventions from physical therapy, occupational therapy, pain psychology, and nursing into their outpatient pain rehabilitation program. The modalities included group physical

activity sessions, group and individual education sessions, group therapy sessions, and medication management support. The findings of their study exhibited success because the clients were able to improve their understanding of pain and acquired further knowledge about different pain management approaches.

Similarly, Oslund et al. (2009) utilized interdisciplinary care by incorporating physical therapy and occupational therapy into their intervention approach with modalities like physical conditioning, strengthening, and lifestyle adaptations to promote engagement. The outcome of the study concluded that the multimodal approach was successful in reducing chronic pain. The clients' perceived pain levels decreased, and their understanding of pain management approaches increased to help them engage in their meaningful activities. Scott-Dempster et al. (2017) used a multimodal approach that incorporated physical therapy interventions, including pain education, group activities, and take-home education. The study concluded that it was an effective multimodal approach to promoting more positive outcomes for people experiencing chronic pain. The study helped clients refine their abilities to reduce pain levels through different management approaches and enhance their comprehension of pain. Additionally, a vital member of the interdisciplinary team is the client. Scott-Dempster et al. (2017) concluded that for an intervention to be successful, the client must be actively engaged and committed to the intervention. To conclude, the use of multimodal interventions within interdisciplinary teams achieved successful results.

Another common finding seen throughout the literature was pain education interventions for the treatment of chronic pain. Kurklinsky et al. (2016), Oslund et al. (2009), Scott-Dempster et al. (2017), and Simon and Collins (2017) each used pain education within their approaches. Simon and Collins (2017) incorporated pain education using modules within their occupational

therapy sessions. The modules consisted of multiple topics, including self-care and health management, function rehabilitation, community integration, and general pain health management. Similarly, Kurklinsky et al. (2016) incorporated pain education through sessions overseen by the pain psychologist. These sessions covered discussion topics that included cognitive coping skills, chronic pain cycles, and maintaining lifestyle changes.

Furthermore, Oslund et al. (2009) incorporated pain education through group sessions. The sessions in the study covered topics that ranged from nutrition to the relationship between stress and pain, which primarily focused on the management of chronic pain. An important quality of pain education is the ability for clients to take the education and apply it to their daily lives. Scott-Dempster et al. (2017) found that providing clients with a tangible structure and established methods to implement in their lives promoted greater activity participation. Additionally, the study concluded that the improvement in participation promoted a positive change in perspective by adapting the pace at which clients participated in life. Incorporating pain education into chronic pain management treatment programs is an effective way to reduce chronic pain without the use of opioids.

One final common finding throughout the literature was the use of occupational therapy interventions for the treatment of chronic pain. Kurklinsky et al. (2016), Oslund et al. (2009), and Simon and Collins (2017) each used occupational therapy within their approach to pain management. Simon & Collins (2017) incorporated occupational therapy through an approach called Lifestyle Redesign®. The intervention approach is a manualized occupational therapy treatment method grounded in occupational science research. It emphasized facilitating patient development of healthy self-care routines and habits to prevent and manage chronic conditions.

The occupational therapy aspect focused on patient education, occupational self-analysis, problem-solving, motivation building, and implementation of positive behaviors. Comparatively, Kurklinsky et al. (2016) incorporated occupational therapy using group lectures and individual sessions. The main goal for the occupational therapy sessions was to focus on moderation and balance of daily activity with modification as needed to increase independence and engagement within occupations. The group lecture session focused on the occupations of ADLs, IADLs, and work. Individual sessions focused on learning diaphragmatic breathing and muscle relaxation techniques and ways to employ these strategies during activities. Likewise, Oslund et al. (2009) incorporated occupational therapy through the development of adaptive behaviors and skills to support engagement in meaningful activities. Occupational therapy's role in chronic pain management involves different types of interventions to help support health maintenance. Occupational therapy is pertinent to the client's ability to engage in meaningful occupations. Although Scott-Dempster et al. (2017) did not use an occupational therapy specific approach, their findings demonstrate that activity pacing can be a useful intervention to use in both occupational therapy and other professions.

Limitations found throughout the literature include lack of control for contamination from outside treatments, lack of control for randomization, absence of a control group, and exclusion of data from participants who dropped out of the study. Strengths include the multiple non-opioid interventions, the use of psychometrically established assessment tools, and consistent results across studies for occupational therapy practitioners to implement in the treatment of chronic pain. The studies showed moderate external validity, as the interventions examined were determined to be successful but may not be generalizable to a larger chronic pain

population due to the biases discussed in the clinical practice applicability. Moderate internal validity was determined because not all studies controlled for interactive effects and mortality.

Across the four studies, multimodal interventions used by interdisciplinary teams, which include occupational therapy practitioners, focused on pain education, were determined to be an excellent method for chronic pain management. The findings indicate strong reliability. All studies found considerable success; study participants reported that they experienced reduced pain and greater quality of life. Overall, the validity and reliability of the studies demonstrate that the interventions are appropriate for occupational therapy practitioners to include within their interventions when treating clients experiencing chronic pain.

## Clinical Practice Applicability

Chronic pain reduces quality of life, self-efficacy, functional capabilities, and engagement within meaningful activities. According to Phillips (2009), chronic pain contributes to societal costs in terms of health care dollars and lost productivity. The standard treatment for chronic pain is the use of opioids; however, this can lead to dependence and misuse. A client-centered non-opioid pain management approach is needed to reduce suffering and the negative impact that chronic pain has on society. Four studies were analyzed to assist in bridging the gap between the use of opioids for chronic pain management and the use of lifestyle interventions.

Key findings of the studies included efficacy of multimodal treatment, use of interdisciplinary teams, pain education, and occupational therapy interventions. The findings demonstrate that chronic pain patients perceive less pain, improved QOL, improved functional ability, and improved mindset (Kurklinsky et al., 2016; Oslund et al., 2009; Scott-Dempster et al., 2017; Simon & Collins, 2017). Biases that were discovered throughout the studies include socioeconomic bias, insurance obtainability bias, and healthcare accessibility bias. Participants

were referred to the studies by their primary care physicians, indicating that the studies represent a population that has access to healthcare and are part of a socioeconomic status that allows them to have health insurance. Therefore, the findings of these studies may be generalizable only to those whose socioeconomic status involves employment with healthcare or insurance benefits.

The evidence base supports an interdisciplinary approach to chronic pain management. Furthermore, the evidence base supports occupational therapy's role in managing chronic pain through different types of interventions. Interventions included pain education, motivation building, and the development of positive behaviors and skills. Pain education involves developing proper coping skills, providing more knowledge about chronic pain cycles, and maintaining lifestyle changes to support engagement in daily activities (Kurklinsky et al., 2016; Oslund et al., 2009). Occupational therapists assist clients using these interventions to improve quality of life and self-efficacy when engaging with the world around them. Effective chronic pain management involves a team-based approach that utilizes multiple intervention methods. This approach achieves the most significant non-opioid outcomes in reducing pain severity and increasing engagement in meaningful occupations.

Implementing a non-opioid pain management program into practice requires a sequence of steps for establishment. Stakeholders primarily include occupational therapy practitioners, but the intervention design is valuable to other healthcare professions involved in chronic pain management, such as physical therapists and pain psychologists. The development of an interdisciplinary team is the first step in creating a non-opioid chronic pain management program. Next, the program must be designed to include pain education and lifestyle management to support occupational participation. Moreover, multiple modes of intervention should be implemented, including physical, cognitive, and behavioral therapies to improve

quality of life. It is necessary to select assessments that measure chronic pain perception and quality of life to objectively evaluate client progress through the program. Logistics of program implementation should be determined including duration, frequency, location, and other program-specific details. Finally, a vital component to the success of the program is collaborating with physicians to develop a referral plan for people who experience chronic pain. Developing an interdisciplinary non-opioid chronic pain management program will support the IADL of health management and, therefore, will improve the quality of life and occupational participation of adults experiencing chronic pain.

References

American Occupational Therapy Association. (2014). Occupational therapy practice framework: Domain and process (3rd ed.). *American Journal of Occupational Therapy, 68*(Suppl. 1), S1-S48. doi.10.5014/ajot.2014.682006

Dahlhamer, J., Lucas, J., Zelaya, C., Nahin, R., Mackey, S., DeBar, L., Kerns, R., Von Korff, M., Porter, L. & Helmick, C. (2018). Prevalence of chronic pain and high-impact chronic pain among adults—United States, 2016. *Morbidity and Mortality Weekly Report, 67*(36), 1001. doi:10.15585/mmwr.mm6736a2

Dowell, D., Haegerich, T. M., & Chou, R. (2016). CDC guideline for prescribing opioids for chronic pain—United States, 2016. *The Journal of American Medical Association, 315*(15), 1624-1645. doi:10.1001/jama.2016.9242

James, L. W. & Walter, J. R. (2015). Teams and occupational therapy practitioner leadership. In S. B. Dunbar & K. Winston (Eds.), *An occupational perspective on leadership: Theoretical and practical dimensions* (2nd ed., pp. 167-178). Slack Incorporated.

Kurklinsky, S., Perez, R. B., Lacayo, E. R., & Sletten, C. D. (2016). The efficacy of interdisciplinary rehabilitation for improving function in people with chronic pain. *Pain Research and Treatment, 2016*. doi.10.1155/2016/7217684

Ling, W., Mooney, L., & Hillhouse, M. (2011). Prescription opioid abuse, pain and addiction: clinical issues and implications. *Drug and Alcohol Review, 30*(3), 300-305. doi:10.1111/j.1465-3362.2010.00271.x

Merriam-Webster. (n.d.). Multimodal. In *Merriam-Webster.com dictionary*. Retrieved from https://www.merriam-webster.com/dictionary/multimodal

National Institutes of Health Interagency Pain Research Coordinating Committee. (2016). *National Pain Strategy: A comprehensive population health-level strategy for pain.* Retrieved from https://iprcc.nih.gov/docs/HHSNational_Pain_Strategy.pdf

Oslund, S., Robinson, R., Clark, T., Garofalo, J., Behnk, P., Walker, B., Walker, K., Gatchel, R., Mahaney, M., & Noe, C. (2009). Long-term effectiveness of a comprehensive pain management program: Strengthening the case for interdisciplinary care. *Baylor University Medical Center Proceedings, 22*(3), 211-214. doi.10.1080/08998280.2009.11928516

Phillips, C. J. (2009). The cost and burden of chronic pain. *Reviews in Pain, 3*(1), doi: 10.1177/204946370900300102

Pitcher, M. H., Von Korff, M., Bushnell, M. C., & Porter, L. (2019). Prevalence and profile of high-impact chronic pain in the United States. *The Journal of Pain, 20*(2), 146-160.

Ross, H. (2018). *Health behaviors to prevent and manage chronic conditions*. Retrieved from https://www.aotf.org/About-AOTF/Research-Priorities/Research-Priorities-Initiatives/health-behaviors-to-prevent-and-manage-chronic-conditions

Schwan, J., Sclafani, M., & Tawfik, V. (2019). Chronic pain management in the elderly. *Anesthesiology Clinics, 37*(3), 547-560. doi:10.1016/j.anclin.2019.04.012 doi:10.1016/j.anclin.2019.04.012

Scott-Dempster, C., Toye, F., & Baker, K. (2017). The experience of activity pacing in chronic pain management--An interpretive phenomenological analysis of out-patient physiotherapy and patients. *Physiotherapy Theory and Practice, 33*(11), 841-849, doi.10.1080/09593985.2017.1357149

Simon, A. U., & Collins, C. E. (2017). Lifestyle Redesign® for chronic pain management: A retrospective clinical efficacy study. *American Journal of Occupational Therapy, 71*(4), 7104190040p1. doi:10.5014/ajot.2017.025502