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Cognitive-Behavioral Therapy and Self-Management Interventions for Chronic Pain

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Introduction

Chronic pain affects 20–30% of the population in Western countries and is the leading cause of disability in the working-age population. Chronic pain is challenging to treat because it encompasses biological, psychological, and social components. As such, the treatment of chronic pain requires a multidisciplinary approach that addresses each of these areas.

Understanding chronic pain from a biopsychosocial perspective involves viewing pain as a subjective experience with treatment approaches aimed at the management of pain [1]. Psychological approaches to the management of chronic pain foster behavioral and cognitive changes rather than elimination of pain itself. Cognitive-behavioral therapy focuses on how thoughts influence feelings and behaviors; it has both psychological and behavioral components.

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Cognitive-Behavioral Therapy

Cognitive-behavioral therapy applies psychological principles to change behaviors, thoughts, and feelings of individuals with chronic pain. Cognitive-behavioral therapy has become a first-line psychosocial treatment for individuals with chronic pain over the last three decades and has been shown to be effective in chronic pain conditions such as headaches, arthritis, orofacial pain, fibromyalgia, and low back pain [1]. Some of the goals of cognitive-behavioral therapy include allowing individuals to view pain as manageable, to improve quality of life, and decrease psychological distress [2]. Key components of therapy include cognitive restructuring, behavioral therapy, coping skills training, and problem-solving techniques [2].

- **Cognitive restructuring** is the main feature of cognitive-behavioral therapy. It involves teaching an individual to recognize negative thoughts and cognitions. Examples of such thoughts include, "My pain will never get better." "My pain is 10/10 all the time." "I can't do anything because the pain is so bad." Pain catastrophizing refers to exaggerated negative thoughts and emotions during an actual or perceived painful stimulation [3]. Once these maladaptive cognitions are recognized, the goal of cognitive restructuring is to reformulate the negative thoughts [2].
- **Behavioral Therapy:** Fear-avoidance refers to avoidance of activities in which individuals

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have experienced pain to reduce the likelihood of re-experiencing pain or causing further damage [3]. Fear-avoidance can perpetuate deconditioning and disability. When considering fear-avoidance, psychoeducation and graded exposure are examples of effective cognitive restructuring techniques [2]. Graded exposure involves a stepwise, tiered approach to addressing activities feared to cause pain. In a study of patients with chronic low back pain, graded exposure was associated with reduced pain intensity and disability.

- **Coping skills training**: The goal of coping skills training is to identify and increase adaptive coping strategies while identifying and decreasing maladaptive coping strategies [2]. Pain catastrophizing and fear-avoidance are examples of maladaptive coping strategies. A study of chronic pain patients found that maladaptive coping strategies were significantly associated with pain interference and depression when compared with patients with adaptive coping strategies [4]. Positive self-statements and problem-focused coping are examples of adaptive coping strategies [5]. Problem-focused coping involves direct attempts to deal with pain.
- **Problem-solving techniques**: The ability to adopt a positive problem orientation, evaluating options, and generating alternative solutions are key problem-solving techniques to improve the perception of pain [6].

Self-Management Interventions

Self-management interventions for chronic pain are strategies taught to improve pain, mental health, and health-related quality of life outcomes [6]. Since individuals with chronic pain often deal with pain daily, having strategies that can be performed each day can be very beneficial. It is important to note that self-management strategies require self-efficacy: the ability of an individual to assess their situation and resources to decide on a course of action [7]. Common behavioral components include techniques such as diaphragmatic breathing, guided imagery, progressive muscle relaxation, and autogenic training [2].

- **Diaphragmatic breathing**: Slow, deep breathing while engaging abdominal muscles. Breathing in to a count of two and breathing out to a count of four is one example of a diaphragmatic breathing technique to facilitate relaxation.
- **Guided imagery**: Imagining a safe and peaceful environment provides a distraction from pain and encourages relaxation.
- **Progressive muscle relaxation:** Involves focusing on a specific muscle group, tensing that group of muscles, and then relaxing the muscle group to demonstrate awareness of the body and to relax.
- **Autogenic training**: Combines visualization with repeating a phrase such as "My mind is calm, relaxed, and quiet."

Self-management techniques provide distraction and give individuals a sense of control over their pain. In a 2005 study of patients with chronic low back pain comparing breath therapy alone and physical therapy alone, outcome measures of pain and disability in both groups were comparable [7]. This attests to the benefits that self-management techniques can have in the management of chronic pain.

The incidence of chronic pain will continue to increase as individuals are living longer. A multimodal approach addressing the biological, psychological, and social components of chronic pain will be best to develop a comprehensive management plan.

High Yield Points

- The treatment of pain involves a multidisciplinary approach.
- Cognitive-behavioral therapy involves psychological and behavioral components.
- Cognitive restructuring is the main feature of cognitive-behavioral therapy.
- Graded exposure is a behavioral treatment for fear-avoidance.
- Self-management interventions can give individuals a sense of control over their pain.

Questions

1. This self-management technique combines visualization with repeating phrases to encourage relaxation.
   A. Guided imagery
   B. Autogenic training
   C. Graded activation
   D. Graded exposure
   Answer: B
2. A 34-year-old female who suffered an ankle sprain 2 years ago while jogging now avoids most activities. She would likely benefit from which of the following therapies?
   A. Graded exposure
   B. Fear-avoidance
   C. Surgery
   D. Amitriptyline
   Answer: A
3. Which of the following is an adaptive coping strategy?
   A. Fear-avoidance
   B. Catastrophizing
   C. Problem-focused coping
   D. Problem-avoidance
   Answer: C

References

1. Ehde DM, Dillworth TM, et al. Cognitive-behavioral therapy for individuals with chronic pain. Am Psychol. 2014;69(2):153–66.
2. Roditi D, Robinson M. The role of psychological interventions in the management of patients with chronic pain. Psycholo Res Behav Manag. 2011;4:41–9.
3. Gatchel RJ, Neblett R, et al. Fear-avoidance beliefs and chronic pain. J Orthop Sports Phys Ther. 2016;46(2):38–43.
4. Tan G, Teo I, et al. Adaptive versus maladaptive coping and beliefs and their relation to chronic pain adjustment. Clin J Pain. 2011;27(9):769–74.
5. Peres MF, Lucchetti G. Coping strategies in chronic pain. Curr Pain Headache Rep. 2010;14(5):331–8.
6. Mann EG, LeFort S, VanDenKerkhof EG. Self-management interventions for chronic pain. Pain Manag. 2013;3(3):211–22.
7. Bandura A. In: Freeman WH, editor. Self-efficacy: the exercise of control. New York: Worth Publishers; 1997.