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## **Cognitive Behavioral Therapy for Chronic Pain in Veterans**

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## **Cognitive Behavioral Therapy for Chronic Pain in Veterans**

Many veterans that have served in the United States (US) military forces struggle with chronic pain from both their time served in the military and from incidents that have happened since they were discharged. Jim Paton served in the US Air Force for 4.5 years. One day he was walking on a beach in Florida and got struck by lightning. When he woke up in the hospital, he was told that he had died, but was resuscitated. However, the lightning impact on his body damaged the spinal cord and vertebrae in his neck, which he needed surgery for. After this, he started struggling with neuropathy in his feet. This event left him feeling depressed and anxious as he could no longer function as well as he used to. The more he moved, the more he would suffer from pain later that day. This impacted his day to day activities and it put a strain on the relationship with his family. He was on narcotics for the pain and was able to wean down to Ibuprofen, but the pain was still there, constantly (Veterans Health Administration, 2020). This is a story that many veterans can relate to. People who live with chronic pain often become frustrated because the pain is still there after trying different medications, physical therapy, and even surgery. Jim, alongside many veterans, was recommended by their primary care provider at the US Department of Veterans Affairs (VA) to go see a pain psychologist. The pain psychologist would then introduce them to Cognitive Behavioral Therapy for Chronic pain (CBT-CP).

CBT-CP is a treatment intervention that aims to give the patient tools to control the impact that chronic pain has on their body and mind. As pain affects every part of a person's life, the treatment of chronic pain needs to focus on every part of that person's life. Changing the way you think about and deal with chronic pain, changes the way pain is processed in your brain. For Jim, this meant that he was able to take control of his pain, instead of letting the pain control

him. The purpose of this paper is to explore the issue of chronic pain in veterans, and to discuss the use and efficacy of Cognitive Behavioral Therapy (CBT) as a treatment for chronic pain.

### **Chronic pain**

Chronic primary pain is classified as persistent or recurring pain lasting more than three months (Perugio et al., 2022, Huang, 2022, Taguchi et al., 2021b, & Mannes et al., 2022).

Chronic pain does not only affect a person's physical health. It also impacts their mental health, relationships with others, ability to complete daily tasks, keep jobs, participation, and overall quality of life. Not only does chronic pain affect individuals, but it also has a big impact on healthcare costs. According to Harding et al. (2019), Huang (2022), & Mannes et al. (2022), chronic pain results in a loss of around \$62 billion due to lost productivity in the United States workforce. In addition to lost productivity in the workforce, Huang (2022) also states that the "estimated (the) annual direct costs for all chronic pain conditions were \$386 million, or approximately \$31,692 per patient" (p. 36). As one of the most common reasons adults seek medical care (Perugino et al., 2022, & Huang, 2022), chronic pain is a part of "three of the four leading causes of years lost to disability are chronic pain conditions" (Huang, 2022, p. 36). Recent studies show that chronic pain affects about 20-30% of people (Perugio et al., 2022 & Williams et al., 2022), which is why it is an important topic to discuss and explore.

Quality of life is an important concept to consider, especially for patients with chronic pain. According to Huang (2022), quality of life includes the individual's perspective of all the aspects of the person's life. This includes physical health and mental health, "well-being, life satisfaction, family and peer relations, work activities, recreation, schooling, housing, and financing" (p. 38). As chronic pain is related to "reduced health-related quality of life, poorer

sleep quality and concentration, medication abuse and elevated levels of depression and anxiety” (Hung, 2022, p. 36), it is a debilitating disorder that needs to be taken seriously.

### **Chronic Pain Cycle**

The chronic pain cycle helps us understand how chronic pain affects daily life and how easy it is to get stuck in the cycle that prevents people from getting better. The chronic pain cycle can be explained like this; A person who has an onset of chronic pain will have decreased activity and ability to function day to day due to the pain. The decreased activity leads to physical deconditioning, for example, muscle atrophy. This change in their life may lead to negative thoughts and emotions, which greatly impact that person’s mental health. Decreased mental health contributes to avoidance and withdrawal from daily activities and relationships with friends and family. That person now has physical deconditioning, poor mental health, and a poor support system, which leads to more distress and disability, which usually leads to increased pain. This is how the chronic pain cycle continues.

Multiple psychological components of chronic pain affect how a person both processes and manages their chronic pain (Martinez-Calderon et al., 2022). This can greatly influence how a person copes with chronic pain no matter the intensity of their pain. One of these components is pain acceptance. Pain acceptance involves dealing with the pain without trying to control or avoid it, and continuing activities and goals despite the experience of pain and pain symptoms (Martinez-Calderon et al., 2022 & Huang, Y., 2022). Pain self-efficacy is the “ability to conduct a determined movement and/or activity and produce the desired outcome despite pain” (Martinez-Calderon et al., 2022, p. 2). It involves the belief that the patient can somewhat control their pain. Increased self-efficacy has also shown improvements in pain outcomes (Murphy et al., n.d.). Optimism is also related to chronic pain, as maintaining positive thoughts and expectations

despite not knowing the outcome of the future (Martinez-Calderon et al., 2022) may greatly increase everyday functioning. Pain acceptance, pain self-efficacy, and optimism have shown positive effects on coping with chronic pain. These concepts also show to be “associated with less disability, pain, disease activity, distress, and medication use” (Martinez-Calderon et al., 2022, p. 2).

### **Chronic Pain in Veterans**

While there is a high number of people experiencing chronic pain, it disproportionately affects military veterans (Mannes et al., 2022 & Ward et al., 2022). This is related to high opioid use among veterans, and “a high prevalence of musculoskeletal injuries and comorbid mental health disorders such as post-traumatic stress disorder, major depressive disorder, and other mental disorders” (Ward et al., 2022, p. 1). According to Harding et al. (2019), “Chronic pain affects 47–78% of Veterans presenting to Veterans Health Administration (VHA) clinics” (p. 127), while Mannes et al. (2022) wrote that over 45% of patients at the Veterans Health Administration (VHA) are affected by chronic pain. This is a much larger number affected than the general population, which mentioned earlier was about 20-30%.

The VHA is the largest integrated healthcare system in the United States. According to their government website (<https://www.va.gov/health/>), every year they provide care to nine million Veterans through their 1,298 healthcare facilities. This care includes chronic pain services at their facilities, meaning there is no need for prior authorizations or outside referrals (Mannes et al., 2022). Even though this is offered through the VHA, not all veterans are eligible to receive care at the VHA. Eligibility requirements include, but are not limited to, “low-income or service-related disabilities” (Mannes et al., 2022, p. 3938). Therefore, even though the VHA offers treatment, it is not accessible to all veterans.

## **Treatments for chronic pain**

When it comes to treatments for chronic pain, several approaches can be taken. These approaches are usually divided into two categories; treatments administered by a provider, and treatments initiated by the patient (Harding et al., 2019). Those that are administered by a provider include prescriptions of medications, injections, surgeries, and more. Treatments initiated by the patient include approaches that focus on strategies for self-management and coping to improve quality of life. Some examples of these include heat or ice treatment, exercise (sometimes initiated by a physical therapist), and mindfulness/relaxation techniques. Opioids have previously been the standard of care for chronic pain (Mannes et al., 2022), but due to the opioid epidemic, there has been a shift towards exploring non-pharmacological modalities (NPMs) for chronic pain. The Center for Disease Control and Prevention (CDC) also played a big factor in recommending NPMs as the new first-line treatment for chronic pain (Mannes et al., 2022). According to Mannes et al. (2022), when it comes to treatments for veterans with chronic pain, about “14.9% used prescription opioids, 43.8% used any NPM, and 16.4% used multimodal NPMs” (p. 3943).

### **Opioid epidemic**

According to the CDC, “the number of drug overdose deaths ... has quintupled since 1999”. In 2020, about 75% of deaths due to drug overdoses involved opioids. Opioids were first prescribed in the 1990s for pain. Because such a high number of veterans suffer from chronic pain, they were the exact type of patient that were prescribed opioids. Due to this, research shows that the veteran population has a seven times higher prevalence of opioid use disorder than the general United States population (Ward et al., 2022).. Between 2001 and 2009, “opioid prescribing in the VHA increased from 17 to 24%” (Mannes et al., 2022, p. 3938). With this

increase, there was also an increase in opioid-related hospitalizations, overdose, and self-inflicted injuries (Mannes et al., 2022), and veterans have almost two times greater risk for accidental overdose on opioids (Ward et al., 2022). Due to opioids being highly addictive, the VHA enacted the Opioid Safety Initiative (OSI) in 2013. The OSI focused on provider education, academic detailing, and access to NPMs to reduce the number of opioids prescribed. According to Mannes et al. (2022), it “contributed to a 64% decrease in opioid prescribing” (p. 3938).

Even though the trend of deaths due to opioid overdose is increasing, despite national initiatives, this may also be due to the “increased use of illicit opioids” (Ward et al., 2022, p. 2). This trend could also be explored in a separate paper as it is a very concerning and prevalent issue. Because of initiatives aimed at reducing the use of opioids, it has become important to provide optional therapies to supplement opioids. Therefore, the VHA promotes the use of NPMs, which is consistent with the CDC guidelines regarding opioids (Mannes et al., 2022).

### **Non-Pharmacological Modalities**

The most common NPMs among veterans with chronic pain is physical therapy, massage, relaxation strategies, and chiropractic care (Mannes et al., 2022). These types of treatments are “associated with lower risk of overdose, suicidal ideation, and self-injurious behavior” (Mannes et al., 2022, p. 3938). Because VHA patients are also disproportionately affected by mental health issues like post-traumatic stress disorder (PTSD), chronic pain may also further exacerbate psychiatric symptoms (Mannes et al., 2022). Not only does NPMs lower the risk for overdose, but it is also shown to “result in lower health care costs” (Harding et al., 2019, p. 127) from less hospitalization and less medication use. This is because self-management interventions include things like ice packs and exercise, they help bring the cost down. These NPMs also include CBT-CP, which has now become the first-line treatment for chronic pain at the VHA.



## **The Biopsychosocial Model**

The biopsychosocial model is another way of understanding chronic pain and how to approach treating it. As the name suggests, it consists of biological and psychological approaches, as well as social and environmental interventions (Nicholas, 2022). A big difference between this model over previous models was the focus on the psychological factors and how they influence both how a patient reports their symptoms and their response to treatments (Murphy et al., n.d.). This also acknowledges that every person suffering from chronic pain has a painful experience that is only experienced by them, because of all the different influencing factors. “Since chronic pain can typically not be cured but only managed, it must be viewed as an illness” (Murphy et al., n.d., p. 22). This is because an illness is “influenced by subjective experience” (Murphy et al., n.d. p. 22), which is also why the biopsychosocial model is most widely used in the treatment of chronic pain. As biological factors are hard to target or modify, especially without pharmacological therapies like opioids, the focus on the psychological aspect of chronic pain in this model has contributed to the focus on CBT-CP as a treatment for chronic pain.

### **Psychological Factors**

In order to make a treatment plan that includes the psychological factors for a patient, it is important to assess these factors and how they impact the person’s life. Psychological factors include pain cognition, catastrophizing, hurt versus harm, negative affect, and answer-seeking. Pain cognitions include the patient’s beliefs of their chronic pain, and if those beliefs are negative, they may lead to poor coping, less activity, and greater disability, aka the chronic pain cycle. A negative belief includes catastrophizing, which is assuming the worst regarding their health. It is “among the most problematic of thought patterns associated with pain” (Murphy et

al., n.d., p. 23), as these thoughts may lead to poor participation in treatment. However, a catastrophizing mindset is not set and may respond to cognitive behavioral interventions. The psychological factor of hurt versus harm may affect how a person with chronic pain thinks about their pain. If they have negative beliefs, that chronic pain is leading to greater harm and further tissue damage, then the patient may have worse coping skills than an individual that believes that chronic pain is painful, but not creating more physical damage in their body. For the individual that believes in the harmful aspect, this may then lead to a decreased activity which again, drives the chronic pain cycle. This is termed kinesiophobia, meaning the fear of movement. Chronic pain is hard to treat because the more pain the person is in, the more negative emotions they will experience, and the more negative emotions they have, the more they will feel their pain. Finally, because chronic pain is a complex illness, some patients may not accept the fact that the source of their pain can't be placed on one certain biological thing, which can increase stress which again leads to greater pain (Murphy et al., n.d.).

### **Social and Environmental Interventions**

It is very important for individuals experiencing chronic pain to have a good support system. Nicholas (2022) states that studies on treatments for pain in children greatly include important figures in their lives. He also highlights that involving an individual's workplace in the patient's treatment will greatly benefit the person's treatment plan. However, Murphy et al. (n.d.) state that if the focus of the relationships between the patients and their friends is on chronic pain, it increases the reports of pain, as opposed to social interactions that focus on different topics and activities that draw the attention away from the pain.

## **Cognitive Behavioral Therapy for Chronic Pain**

In 2012, the VA implemented a “national, competency-based training program” (CBT manual) to train clinicians at the VA clinics to incorporate evidence-based psychotherapies for the treatment of chronic pain. They developed Cognitive Behavioral Therapy for Chronic Pain Therapist Manual to guide this treatment. This manual includes the five key components of CBT-CP; exercise, pacing, relaxation training, cognitive restructuring, and behavioral activation, with the last two components focusing on how to identify unhelpful thoughts and change those thoughts, and identifying activities the patient enjoys and focuses on increasing the meaningful and fun activities in the patient’s daily life (Murphy et al., n.d.). Implementing this at the VA also increased accessibility as in the past, pain management treatments have usually been administered at specialty settings like pain clinics (Beehler et al., 2021), where it may be harder to get transportation to and coverage by insurance. According to McGuire et al. (2021), patients that go to specialty pain clinics for CBT-CP have lower treatment completion rates than in other settings. CBT-CP is a treatment that gives the patient tools to break the chronic pain cycle (Murphy et al., n.d.). According to the study done by Murphy et al. (2020), the implementation of CBT-CP has shown “significant patient improvements” (p. 95), which supports this treatment program and increases the ability for veterans to easily access NPMs and to reduce the use of opioids for chronic pain.

### **Cognitive Behavioral Therapy**

CBT focuses on how thoughts, emotions, and behaviors are connected (Burns et al., 2022, Murphy et al., n.d.). In terms of chronic pain, it gives the patient tools to take control of their pain (Taguchi et al., 2021). It does this by fostering self-efficacy, decreasing maladaptive thoughts, and increasing adaptive thoughts (Kutsuzawa et al., 2022). It is important to remember

that it does not take the pain away, but instead teaches the patient how to refocus their thoughts in order to cope with the pain. It is also important to note that even though this treatment focuses on cognition, it is not saying that the chronic pain is all in the patient's head. It still acknowledges that the patient has physical chronic pain, but it focuses on the strength of your mind to refocus and cope. This type of treatment usually consists of eight to 12 sessions (Taguchi et al., 2021b) where they also create a "written maintenance plan with short-term and long-term goals" (Burns et al., 2022, p. 378). Evidence shows that CBT-CP reaches its goal of improving the quality of life in these patients (Murphy et al., n.d.).

### **Exercise**

The exercise portion of CBT-CP is important, because it has many benefits for people experiencing chronic pain. Exercising helps prevent deconditioning, increase strength, decrease obesity and the risks that come with it, and also improve confidence and positive self-perception. Exercising can help remove one part of the chronic pain cycle (decreased activity) in order to stop the cycle. According to Nicholas (2022), exercises also increase internal opioid production to help with pain and decrease opioid prescription medication use. A factor that may affect exercise is guarding. Guarding is defined as "any of a set of protective behaviors such as limping, bracing, or otherwise protecting a part of the body" (Murphy et al., n.d., p. 23). This can then lead to secondary problems and pain in other parts of the body. Therefore, it is very important to educate on what types of exercise with proper form and mechanics to get the greatest benefit with the least harm. It is also important to avoid over-activity. Overactivity may lead to increased pain and therefore lead to not being able to function for long periods or later in the day (Murphy et al., n.d.).

In a study done by Heapy et al. (2021), they focused on CBT-CP with a specific walking program included to increase exercise among the patients. Walking helps with chronic pain by improving “pain intensity and self-reported functions” (Heapy et al., 2021, p. 260), especially for chronic low back pain. This is an important part of CBT-CP, especially since most patients with chronic pain are sedentary. As we know and study shows, physical activity not only helps with pain intensity, but also physical functioning and mood, which are side effects of chronic pain. Walking is also a very accessible form of physical activity as you do not need any equipment, and you can do it no matter where you live. When Heapy et al. (2021) conducted their study by completing CBT-CP over 10 weeks and also including a personalized walking plan for patients with chronic back pain with a 10% increase in daily steps, the percentage of patients who were sedentary decreased, and the percentage of patients who were highly active increased. This in turn helped lower the effects of chronic pain on the patient.

### **Pacing**

As over-activity may lead to increased inflammation of pain, pacing is an important concept taught in CBT-CP. Pacing helps with sensibly completing tasks without over-exerting yourself. It focuses on behaviors like “overactivity, underactivity (boom-bust) cycling, avoidance and excessive persistence” (Antcliff et al., 2022, p. 100). These behaviors may be a coping strategy the patient is using to manage their chronic pain, but they are not effective in the long run. When teaching about pacing, it is emphasized that time guides the activity, not the pain level. They recommend breaking up tasks into smaller chunks, like breaking up a task that will take 3 hours to complete into 4 days of 45 minutes to complete. This not only encourages regular activity that is consistent, but can also help with mood regulation through the feeling of accomplishment.

The benefits of pacing include lower fatigue, a decreased amount of flare-ups of pain, and an increase in the amount of exercise that patients get. It can also help patients understand what and how much their bodies can do before having a flare-up and gives them more control over their lives. Barriers to this concept include work/social commitments (Antcliff et al., 2022), and feelings of control. We do not want to confuse pacing with under-activity as resting too much leads to deconditioning which drives the chronic pain cycle (Murphy et al., n.d.).

### **Relaxation training**

Relaxation training involves teaching techniques that can help decrease stress and muscle tension, which then in turn can help the patient cope with their chronic pain. Relaxation helps bring the individuals out of the “fight or flight” mode that they may experience due to their chronic pain, and therefore decreases stress. Mastering these techniques can also increase the patient’s self-efficacy. CBT-CP focuses on three relaxation techniques; diaphragmatic or deep breathing, progressive muscle relaxation, and guided imagery (Murphy et al., n.d.).

### **Results of CBT-CP**

As CBT-CP has been implemented for about 11 years at the VA now, there have been multiple articles published that have studied the impact of CBT-CP. Many studies have focused on different ways of implementing it, and/or different combinations of treatments. The results show that CBT-CP is effective, and suggests further research on every part of the treatment has shown to reduce opioid use for chronic pain. In the studies done by Kutsuzawa et al. (2022), Taguchi et al. (2021a), and Taguchi et al. (2021b), the effects of CBT-CP did not reduce the pain intensity in the patients, however, it did find significant reductions in depression, anxiety, catastrophic thoughts, and pain-related disability. This is also what CBT-CP claims to do. It does not treat chronic pain and make it go away, but it helps patients cope with the pain and improve

their quality of life. It is also important to complete the entire course of treatment to learn about every part of CBT-CP. According to Taguchi et al. (2021b), the parts that include psychoeducation, attention shift, and cognitive restructuring “improves only catastrophic thinking”, while the second part “improves catastrophic thinking, disability, and mood” (p. 6).

When it comes to what type of patients will benefit the most from this type of treatment, Åkerblom et al. (2021) stated that two components need to be identified. Number one is patient characteristics that will be the most susceptible to CBT-CP. The other key component to identify is the best way for providers to deliver the components of CBT-CP. It is also important that the patients understand the concept of pain acceptance. This is because, without pain acceptance, patients can't do actions or exercise. Without being able to step back (pacing) or being dominated by the pain, one may not take the first step to begin treatment (Åkerblom et al. 2021). Alongside CBT-CP, hypnosis and mindfulness meditation are two non-pharmacological interventions that can be integrated into treatment for chronic pain. In a study done by Williams et al. (2022), they found a “modest decrease in average pain intensity” (p. 1916), and they suggest to start implementing both hypnosis and mindfulness meditation as a complementary treatments. Mindfulness meditation focuses on changing their relationship to pain to acknowledge that it is there and “accepted in the present moment” (Williams et al., 2022, p. 1905). Hypnosis, on the other hand, has previously been used for acute pain, but recent studies have focused on implementing this treatment for chronic pain as well. Hypnosis focuses on pain sensations and trains patients to become more in tune with the sensation.

### **Limitations & Recommendations**

The healthcare worker that implements CBT-CP plays a very important role in the treatment. They are the ones that make decisions if they should try this treatment and decide on

how to modify it. It is very important for them to have a good and understanding relationship with their patients, and know how their patients respond to treatment. During this project, I consulted Dr. Adrianna Hooper and Dr. Krista M. Holman through personal communication on November 9th and November 16th, 2022. They both practice this treatment at VAs. Dr. Holman states that she has seen great improvements in many of her patients' pain management. She specifically talked about one patient that had a major shift in his perspective on pain, and his greatest asset was pacing. Not only did CBT-CP provide him with tools to cope, but the greatest change was in his perspective, and that is what helped him with his chronic pain. Both Dr. Hooper and Dr. Holman highlighted the importance of the patient's mindset as well. Because CBT-CP involves working on things at home over time, some people may not want to put in that effort, or can't stick with it until they see results, leading them to give up early.

In a study conducted by Beehler et al. (2021), 91% of veterans that were surveyed on CBT-CP stated that it was useful, and it had an 89% overall satisfaction rate. However, also according to Beehler et al., the "availability and uptake of behavioral treatment for chronic pain ... show significant regional variability" (p. 354), meaning that CBT-CP is underutilized. With the satisfaction rate and underutilization, we need to focus on how to implement this treatment for more clients and even focus on patients not getting services at the VA. The study done by Mannes et al. (2022) showed that veterans who utilized the VHA were more likely to use non-pharmacological treatments for their chronic pain than veterans that did not utilize the VHA. This included, but was not limited to, CBT-CP. In this study, non-pharmacological treatments also included physical therapy, chiropractic, massage, and more, all of which can help lower the chances of opioid misuse. Therefore, we should consider how the VHA facilitates non-pharmacological treatments and how this can be implemented in all primary healthcare



systems. Implementing CBT-CP and other non-pharmacological treatments in primary healthcare may also increase the availability of patients living in rural areas and those having difficulty with transportation. The study also mentions how insurance can limit the use of non-pharmacological treatments. Still, providing non-pharmacological treatments can provide “long-term cost-saving benefits” (p. 3944).

### **Conclusion**

With chronic pain being one of the leading causes for people seeking healthcare, finding a cost-effective and accessible treatment that does the least harm and has the least risks for its patients is very important. As many people's lives have been ruined due to opioids, it is important to look for other solutions for the treatment of chronic pain. Since the implementation of CBT-CP for veterans at the VA, studies have shown the positive effects of this treatment. Not only has it lowered the use of opioids amongst this patient population, but it has also empowered patients to take control over their pain and their lives. The many components to CBT-CP make it very customizable to individuals, and can therefore be a great line of treatment for different types of personalities and different complaints and pain locations. Due to the success CBT-CP has had at the VA, there should be discussions on how to expand the program so that this type of treatment is available to anyone who is suffering from chronic pain. Based on the studies discussed in this paper, it is also important to improve access to the VA healthcare system to enable more veterans to benefit from the VA and its services. We need to work to increase the utilization of cognitive behavior therapy as a treatment for chronic pain in order for more people to have the same story as Jim Paton.

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