

## Could Optimization of Pain Psychology Help Reduce Opioid Abuse?

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**Received:** May 30, 2018; **Published:** June 07, 2018

Opioid overdose claims 115 American lives every day [1]. According to CDC, patients who receive opioids for more than five days are at risk for long-term use. Prescription opioid-related overdose deaths and hospital admissions for treatment of opioid use disorder have increased in parallel with increases in opioids prescriptions for chronic pain, which quadrupled from 1999 to 2010. The long-term use of opioids can lead to pain hypersensitivity and other physical and psychological comorbidities causing a paradoxical increase in pain. Chronic pain is now the leading cause of disability in the working class [2].

Chronic pain affects more than 100 million adults in America; this number is higher than those affected by diabetes, heart disease, and cancer combined [3]. Pain is a complex process, is prevalent in approximately 20% - 35% of adults [4,5]. It encompasses both physical and emotional components. Depressive disorders [6] among various other conditions are the most frequent accompaniment of chronic pain. Chronic pain, mental health, and substance use disorders form a vital triad [7].

Since pain has a multi-faceted etiology, management strategies may not be limited to pharmacological, surgical or physical interventions. Interdisciplinary approaches [11] including extensive psychological and behavioral evaluation of a chronic pain patient may affect the outcome. Psychological comorbidities predispose patients to pain disorders and negatively affects pain sensitivity, response to treatment and directly proportionate to the dose of analgesia required. Opioids are known to have euphoric and mood elevating effects [8]. Co-occurring psychiatric disorders predispose patients to opioid abuse and dependence.

Treatment of accompanying mood, anxiety and sleep disorders is essential in the patients with chronic pain. Serotonin and norepinephrine reuptake inhibitors (SNRIs) and Tricyclic antidepressants (TCAs) [9] and some anticonvulsants [10] used to treat mood and anxiety disorders also help to reduce pain and hence decrease the need for opioids.

It is essential to screen chronic pain patients on opioid treatment for substance abuse or an ongoing basis. Early treatment of any comorbid psychological and psychiatric disorders is critical for a favorable outcome. It is crucial to empower the patients with knowledge of the pain disorder and the various factors that influence the perception of pain [11]. Setting realistic expectations and goals early in the treatment and educating the patient on the limitations of pain medications may motivate patients to concurrently pursue other non-pharmacological treatment avenues for their chronic pain hence preventing the over-reliance on opioids.

The concept of pain is better understood as a perception rather than a sensory phenomenon. The fact that there is a wide variation in pain thresholds among different people and that they respond differently to the same physical injury or insult, it may not be incorrect to make an inference that there may be other non-physical factors that affect the perceived intensity of pain. The dose and duration of opioid treatment are directly dependent on the perceived pain and the associated distress.

Several non-pharmacological interventions may have a place in pain management [12]. Psychotherapeutic approaches including supportive therapy, behavior therapy, cognitive behavior therapy, acceptance and commitment therapy, biofeedback and relaxation therapy, hypnotherapy, guided imagery, mindfulness-based stress reduction, operant behavioral approaches have shown effectiveness in different studies. Psychotherapeutic approaches help in reducing pain catastrophizing. Pain catastrophizing is a phenomenon when patients are preoccupied and worried about their pain resulting in its magnification [13]. It is also an indicator of some risk factors including pain intensity, disability [14], use [15], misuse [16] and dependence [17] of opioids.

Chronic and persistent pain is a distressing and life-disrupting disorder, accompanied by fear and anxiety. This additional burden creates doubts in patients about their future and their ability to carry on with the same quality of life. The chronic stress and fear itself is a complex psychological trauma, which can affect patient's psychosocial environment including work, finances, friendships, and relationships. The stress also predisposes the patients to develop mental health problems. Psychological stressors compromise patient's emotional resilience and pain tolerance, hence a higher reliance on pain medications, increasing the risk of abuse, dependence, and overdose. Without addressing the accompanying psychological issues, it is very challenging to achieve a satisfactory response from the treatment modalities focusing only on chronic pain. The need for a detailed assessment and a multidisciplinary treatment approach that includes addressing the psychological well-being cannot be understated in the treatment of chronic pain.

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**Volume 4 Issue 7 July 2018**

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