Open Access Indonesian Journal of Medical Reviews
Journal Homepage: https://hmpublisher.com/index.php/OAIJMR

Psychological Factors Affecting Pain Response in Critically Ill Patients: A Narrative Literature Review

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ARTICLE INFO

Keywords:
Anxiety
Chronic pain
Depression
Intensive care
Sleep deprivation

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The author has reviewed and approved the final version of the manuscript.

https://doi.org/10.37275/oaijmr.v1i2.35

A B S T R A C T

Critical illnesses are usually painful, both because of the underlying source of the disease and the necessary procedures performed to monitor and care for these patients. This literature review aimed to describe psychological factors affecting pain response in patients. Pain induces anxiety, sleep deprivation, disorientation, agitation, delirium and often becomes chronic depression. Psychological factors (sleep deprivation, anxiety, and delirium) can also increase the perception of pain. Pain assessment is required for proper pain management. Opioids are commonly used in pain management, but acetaminophen, dexmedetomidine, and gabapentin have more advantages. The recent trend is multimodal analgesia, which uses a combination of analgesic drugs with different mechanisms of action. Another trend is the increasing use of pain relievers, which can control pain and relieve anxiety. In conclusion, physiological factors are the cause and effect of pain in critically ill patients. In intensive care patients, anxiety, delirium, and lack of sleep can increase pain sensitivity.

1. Introduction

Regardless of the cause, critical disease is a painful condition. Pain in critically ill patients is often underestimated. Therefore, patients receive poor treatment, which leads to increased morbidity and mortality. Critically ill patients in the intensive care unit (ICU) experience moderate to severe pain during their stay and are associated with long-term mental illness. There are challenges to effective pain reporting.[1] Pain is discomfort associated with actual or potential tissue damage. Although pain relief is a fundamental right, most critically ill patients still experience pain during their admission to the ICU, especially during personal care, wound care, changing positions, or even resting.[2,3] If the pain is not treated correctly, it will harm the patient's health. In ICU patients, pain can cause sympathetic stimulation, leading to a change in hemodynamic status. After discharge, these patients are at increased risk for chronic pain and post-traumatic stress disorder (PTSD).[4] Psychological factors are one of the factors affecting pain response in critically ill patients.[5] This literature review aimed to describe psychological factors affecting pain response in patients.

Psychological factors affecting pain response

Due to changes in the mental status, use of ventilators, or high doses of sedatives or muscle relaxants, most critically ill patients may not tell their pain. Procedures in the intensive care unit such as

bathing, bed sheet changing, massage, and positioning are the most common procedures that cause pain in critically ill patients.[6] Critically ill patients have painful memories and discomfort related to tracheal intubation. Those memories induce chronic pain and PTSD. Pain induces a stress response and increases circulating catecholamines, then causes vasoconstriction, changes tissue perfusion, and reduces the partial pressure of oxygen tissue. Pain also induces catabolism and excessive metabolism.[7,8] This mechanism affects wound healing and increases the risk of infection. Pain inhibits the activity of natural killer cells and leads to a decrease in the number of cytotoxic T cells and a decrease in the phagocytic activity of neutrophils. Three physiological factors can increase the pain response in critically ill patients. They are anxiety, delirium, and sleep deprivation.

Anxiety in critically ill patients usually happens in intubated patients. They feel frustrated because of the inability to tell the pain. High anxiety levels cause restlessness and intractable pain, mechanical ventilation asynchrony, and difficulty in weaning from the ventilator, leading to a prolonged ICU stay.[9,10] Factors related to delirium in critically ill patients are high-intensity stimulation at noon, continuous sleep deprivation, and constantly changing medical staff and the environment. The correct assessment and treatment of pain in patients with delirium can be challenging. There are a few changes in intensive environmental therapy that can reduce the appearance of delirium, such as having more windows, a readable calendar, a recognizable clock, and providing continuity of care. Even if the patient cannot respond verbally, it is essential to communicate with the patient regarding the plan and treatment.

Sleep deprivation causes an increased response to pain in critically ill patients.[11-13] Reasons for poor sleep in ICU patients can be bright lights, noise from fans, monitors, and ventilators, mental state, and circadian rhythm disturbances. A few things can improve sleep quality, such as: reducing exposure to bright light, creating a quiet environment, regulating the circadian rhythm, and using appropriate sedatives and hypnotics. Pain in critically ill patients is often ignored because there are more life-threatening conditions, and no one ever dies because of pain.[14,15]

It is essential to monitor sedation using the Richmond agitation-sedation scale (RASS) to help titration of sedative and analgesic medications separately and decrease the risk of inappropriate therapies. Multimodal analgesia is the use of non-opioids as adjuvants to opioids in critically ill patients can reduce the use of opioids. Sedative can help in analgesia management.

2. Conclusion

Physiological factors are the cause and effect of pain in critically ill patients. In ICU patients, anxiety, delirium, and lack of sleep can increase pain sensitivity. ICU patients are sedated and ventilated, and the scoring scale varies according to whether the patient can communicate. The two groups of patients have different pain assessment scales. Opioids are commonly used in pain management, but acetaminophen, dexmedetomidine, and gabapentin are recommended. A more recent trend is multimodal analgesia, which uses a combination of analgesic drugs with different mechanisms of action. Another trend is the increasing use of pain relievers, which can control pain and relieve anxiety.

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