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Adult Chronic Pain: Recent Findings on Causes and Contributing Factors

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Dear Editor,

According to the definition of pain provided by the International Association for the Study of Pain (IASP), which is widely recognized by healthcare professionals and pain researchers and endorsed by the World Health Organization, pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage (1). It is a subjective experience influenced by biological, psychological, and social factors to varying extents. Pain can be evaluated and classified based on several criteria, including (A) duration (acute and chronic); (B) severity or Intensity (mild, moderate, and severe); and (C) type (nociceptive and neuropathic) (1). Chronic pain is defined as pain that persists for more than three months after an injury or occurs daily for a month, exceeding the healing time for the underlying injury (2). The reduction in pain threshold, increased sensitivity, and heightened responsiveness to pain can lead to both peripheral and central sensitization, which in turn may result in chronic pain (3). Chronic pain affects both physical and psychological health, disrupting every aspect of an individual's life, including home, work, leisure activities, and social interactions. It also influences health resource utilization and incurs direct and indirect costs for both individuals and society (4, 5).

Chronic pain affects at least 10% of the global population, with the prevalence in some countries and regions reaching as high as 20 - 25%. The occurrence of chronic pain is more common in underdeveloped nations than in developed ones. Each year, chronic pain impacts an additional 10% of the global population (6).

Recent advancements in understanding the pathophysiology of chronic pain have shown that a patient's perception of pain and their response to pain relief treatments are influenced by their genetic composition. The enzymatic activity can significantly alter sensation perception, addiction propensities, and the metabolism of medications, thereby complicating treatment strategies. Genetic mutations affecting ion channel genes may cause channelopathies, conditions that can drastically change how a patient perceives and responds to pain stimuli. Some individuals may suffer from distressing medical symptoms due to a genetic mutation that results in a dysfunctional channel protein. Therefore, gene therapy holds potential as a means to prevent or reduce both acute and chronic pain. Furthermore, genetic mapping and screening could provide valuable insights for pharmaceutical interventions (7).

Research indicates that people in certain countries are more susceptible to experiencing pain. This susceptibility is linked to national characteristics such as geographical location, population density, life expectancy, gender inequality, and income disparity. Gender inequality and restrictive gender norms negatively affect the health of the entire population, not just women and girls. Increased gender inequality raises the risk of experiencing pain for both men and women, with a more significant effect observed in women. Additionally, the World Health Organization has highlighted the adverse impacts of high population density on mental and physical health. Problems may be more prevalent in areas with poor housing conditions, overcrowded public transportation, inadequate sanitation, high pollution, unsafe conditions for physical activity, and elevated stress levels (8).

Recent evidence also connects chronic pain to various factors:

(1) Demographic factors: age, gender, socioeconomic status, unemployment, poverty, low income, and limited education.

(2) Lifestyle and behavioral factors: alcohol consumption, smoking, lack of physical activity, poor diet, insufficient sunlight exposure, and vitamin D deficiency.

(3) Clinical factors: genetics, obesity and being overweight, sleep issues, and the presence of other medical conditions.

(4) Psychological factors: a temperament prone to negative affectivity, inflexible problem-solving strategies, catastrophic thinking, avoidance behaviors, exposure to painful events, emotional trauma, difficulty tolerating ambiguity, feelings of helplessness, and mental health conditions such as depression and anxiety.

(5) Other influences on pain perception include attitudes and beliefs about pain, a history of severe injury, experiences of abuse or interpersonal violence, relational distress, work-related stress, and prior painful experiences of high intensity (9, 10).

Chronic pain has become a significant health issue in both developed and developing countries, with its prevalence increasing in recent years. Additionally, the healthcare system faces considerable costs from treating chronic pain. Therefore, it is crucial to pay attention to these underlying factors and develop strategies to address them.

Footnotes

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