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Let's Talk about Pain:

Integrating Pain Education into Health and Physical Education

By Isabelle Bogard, Steven J. Kamper, Andrew Sortwell, Christopher M. Williams, Urs Granacher, Ferman Konukman, and Tie P. Yamato

Health and physical education (HPE) aims to teach young people the knowledge, skills, and dispositions to lead an active and healthy lifestyle (Humphrey & Cruickshank, 2018). HPE is essential in supporting students' holistic development and enhances their health and well-being in varied and changing contexts. If HPE misses important health challenges, students may be less equipped to make informed health decisions (Pulimeno et al., 2020).

Young people today are at risk for numerous lifestyle-related chronic health conditions due to the availability of unhealthy foods, built environments that discourage physical activity, and accessibility of drugs and alcohol (Hu et al., 2023; Striley et al., 2022), and children with chronic pain are at greater risk (Kamper et al., 2016).

Pain is an underrecognized health concern for young people and can have significant impacts on physical, social, and psychological health during adolescence and throughout life. Unlike for other health issues affecting adolescents, there are no broadly delivered school-based health initiatives addressing pain and pain management. This article presents a three-part strategy to integrate evidence-based education about pain and pain management into HPE classes.

The Impact of Pain on Young People

Pain is a universal human experience and is usually temporary and inconsequential, but for some people it persists and impacts their quality of life (Painaustralia, 2021). Chronic pain persists or recurs for longer than three months (World Health Organization, 2019/2021). In young people, chronic pain is associated with less physical activity (Swain et al., 2016), higher rates of obesity (Hestbaek et al., 2021), poorer mental health, and increased substance use (Kamper et al., 2019; McLaren et al., 2017), and it can impact sport participation, social engagement, and school attendance (Bejia et al., 2005; Jones et al., 2004; Konijnenberg et al., 2005; O'Sullivan et al., 2012). Further, young people who experience chronic pain often have worse psychosocial and physical health in adulthood (Hassett et al., 2013; Jones & Macfarlane, 2009; Owiredua et al., 2020).

Teaching Adolescents about Pain

As with other health conditions, learning about pain can lead to better outcomes. Providing learning opportunities about health and development during adolescence is optimal, given that it is a critical period of neurological and social development (Bundy et al., 2017). Unlike the substantial investment into school-based health initiatives focusing on physical activity, nutrition, and mental health, none address pain and pain management. Concerningly, adolescents also often receive inaccurate information about pain and pain management through healthcare systems (Henschke et al., 2014). Pain education involves learning about pain and pain management. Learning about pain at school is an opportunity to empower students to understand and manage their health during adolescence and potentially change the trajectory of chronic pain in adulthood.

The Biopsychosocial Model of Pain

The contemporary understanding of pain is underpinned by the biopsychosocial model, which aligns with the holistic model of health education taught within HPE. Pain education is also linked to other topics covered within HPE. Historically, pain has been understood through a "biomedical" lens whereby pain was a direct analog of tissue damage (injury) (Meints & Edwards, 2018). This conceptualization neglects the psychological and social aspects of pain. The biopsychosocial model positions health and illness as a complex interaction of biological, psychological, and social factors (Engel, 1977). Pain is now understood as a complex, individual experience with sensory and emotional components, which may or may not be related to tissue damage (World Health Organization, 2019/2021). However, misconceptions about pain persist, impacting prognoses and highlighting the importance of holistic education in HPE (Champion et al., 2019; Hall et al., 2021).

Integrating Pain Education into Health Education in Secondary Schools

Pain education can be seamlessly integrated into the current HPE curriculum. The biopsychosocial model of pain aligns with the model of health already taught within the school curriculum, and pain is related to other topics covered in HPE syllabuses, such as drug prevention, relaxation activities (i.e., mindfulness), nutrition, mental health, and first aid for sports and other injuries (Australian Curriculum Assessment and Reporting Authority, 2018). Given these links, it makes sense to provide evidence-based education about managing inevitable episodes of pain in HPE classes.

Table 1 provides an overview of a pain education module in three parts that aligns with the HPE curriculum in Australia. This strategy was developed through collaboration between clinicians and researchers with expertise in pediatric pain, and education specialists with expertise developing HPE curricula. Content was informed by a survey and interviews with adolescents (Bogard, Kamper, Ayre, et al., 2023; Bogard et al., 2023).

Conclusion

Educating students in HPE classes about the biopsychosocial model fosters critical-thinking skills by challenging outdated views of pain. Addressing public misconceptions about pain in health and physical education classes helps combat stigma toward individuals experiencing chronic pain. It can also help those living with chronic pain to manage it in healthier ways. A contemporary approach to pain education can lead to a more supportive and understanding community, ultimately improving outcomes for those living with pain.

Table 1. Overview of a Three-Part Pain Education Module

Learning Objective	Teaching and Learning Strategy	Overview of Content
Part one: Pain and its impact		
Be able to define pain.	Brainstorm the meaning of pain within sport and then redefine the meaning in other contexts.	Pain is an unpleasant *sensory* (we feel in our body) and *emotional* (we have a psychological reaction) experience that may or may not be related to injury (tissue damage). Pain is an *individual* experience. Pain is not visible and may continue after an injury has healed. Pain protects us from danger.
Understand the nervous system's role.	Students view a video to explore the nervous system's role. Use questions to draw out the key content.	Nerve endings called "nociceptors" respond to mechanical force, chemicals, and temperature. When activated, they send signals to the brain that there may be danger. The brain assesses this signal along with other information (sensory, emotions, memories, previous experiences) and decides if the person will feel pain and, if so, how intensely.
Be able to describe different types of pain.	Use scenarios specific to HPE and sport to illustrate acute and chronic pain.	*Acute pain* ("short term") is usually the result of injury or illness (e.g., sprained ankle), where pain serves as an alarm to avoid further injury. Acute pain usually resolves as tissues heal, typically taking days to weeks and often requires minimal treatment. *Chronic pain* persists or recurs for over three months due to an ongoing condition (e.g., tennis elbow, endometriosis), nerve damage (e.g., spinal cord injury), or changes in the nervous system. It can persist beyond the time it takes for injured tissue to heal due to nervous system adaptations.
Understand how pain impacts health.	Students investigate and examine the impact of pain on individual and community health.	Pain affects 20% of the global population and costs healthcare systems billions of dollars annually. Pain in young people is associated with other health issues (depression, obesity), unhealthy behaviors (substance use, physical inactivity), and social impacts (missing school and sport, bullying).
Part two: Impact of pain on the whole person		
Be able to describe the biopsychosocial model.	Define the biopsychosocial model and explain how it relates to health and well-being.	The biopsychosocial model views health as a dynamic, personal, and complex phenomenon shaped by biological, psychological, and social factors.

(Continued)

Table 1. Continued.

Learning Objective	Teaching and Learning Strategy	Overview of Content
Be able to apply the biopsychosocial model to pain.	Use case studies of adolescents to demonstrate how biopsychosocial factors influence someone's experience of pain.	Pain is an experience that influences and is influenced by biological, psychological, and social factors: • *Biological factors*: tissue damage/injury, genetics, central nervous system response, life stage • *Psychological factors*: emotions, stress levels, fears, beliefs about pain • *Social factors*: home and school environment, social relationships, cultural beliefs The interaction among these factors helps explain why two people with the same injury experience pain differently and why pain persists for some but not others.
Be able to describe how stigma impacts people with pain.	Define stigma and brainstorm how stigma could impact people with chronic pain. Describe the role of education in reducing stigma.	Chronic pain is often misunderstood due to its complex nature. Stigma (negative beliefs toward a person or group) is common for people with chronic pain. Stigma, including from health professionals, can lead to social isolation, reluctance to seek medical help, and exacerbate mental health issues. Education about pain and fostering supportive communities can mitigate stigma.
Part three: Smart and healthy ways to manage pain		
Identify simple pain-management strategies.	Brainstorm simple pain-management strategies within and outside of sport.	Most pain will only have a temporary impact and will go away without much treatment, if any. Simple management strategies include a short period of rest, first aid, distraction, and gradual return to usual activities.
Be able to apply the biopsychosocial model to pain management.	Use case studies to demonstrate how the biopsychosocial model can be applied to pain management. Emphasize how pain management is individual and contextual.	For chronic pain, the biopsychosocial model helps guide pain management. Various physical, psychological, and social strategies can be used to manage pain, depending on the individual, their circumstances, and their preferences. Examples: • *Physical (biological):* exercises, medication, healthy lifestyle • *Psychological:* relaxation, talking to someone they trust, distraction • *Social:* positive environment, socializing, staying involved in sports and hobbies
Be able to describe ways to seek support for pain.	Brainstorm people who can provide support for pain. Students identify reliable and unreliable sources of pain information.	Various sources, including health professionals, family, friends, teachers, and coaches can offer support for pain management. Feeling understood (validated) is key in discussing pain. Identifying misinformation, characterized by promises of quick fixes, reliance on testimonials, sales pitches, or inducing fear, is crucial for navigating management options.

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The purpose of the Educator's Corner column is to feature short articles about one specific, practical teaching lesson that practitioners at the K–12 level can immediately implement in their classroom. Articles focus on either health or physical education and contain a brief introduction, followed by very practical, quick-hitting information such as bullet points or lists. Submissions should not exceed 1,000–1,500 words (or roughly four typed, double-spaced pages).