

THE BIOPSYCHOSOCIAL APPROACH: A NEW PATH TOWARD HEALING PHYSICAL PAIN IN MUSICIANS

By Sarah E. Oliver 

Chances are, most musicians can point to a significant period during their career when they dealt with physical pain. As of 2018, eight out of ten musicians experience musculoskeletal pain (Cruder et al. 2017). Whether they primarily perform or teach, pain interferes with string players' ability to perform their job most effectively. String players, specifically, report more upper extremity pain than any other part of the workforce (Vastamäki et al. 2020). Obviously, this is concerning to those whose livelihood depends on their body's ability to perform at its peak. Thankfully, the music industry now recognizes this as a problem, and researchers are working to understand why and how to address it best.

A Whole-Person Approach to Pain

Pain is no longer classified as strictly biomechanical but is acknowledged as multifactorial, resulting from many components. A person's unique biology, thoughts, emotions, and psychology are parts of who they are and cannot be separated from the whole. This is the essence of the biopsychosocial model of pain—the individual parts of a person all work together to create every part of them. Sometimes, those parts combine and create pain.

Because of our new understanding of how pain is created, it is no longer advisable or sufficient to focus solely on the technical elements of playing when trying to identify and troubleshoot pain among music performers and teachers. When looking for answers, it is essential to look at the rest of the picture—to examine the whole person. In 2019, research from around the world was compiled into a modern whole-person (biopsychosocial) approach to pain, and it is now shown to be a more effective way to treat pain (Lin et al. 2019). These data seem worthy of consideration for string players and teachers, given that so many of them deal with pain.

If biomechanics is no longer the whole picture, where else can musicians look when seeking pain resolution? There are many psychosocial factors that contribute to physical pain. For the sake of ease, let us divide them into three categories: mental health, sleep, and self-efficacy.

The Role of Mental Health

Mental health can play a role in the appearance of pain. Anxiety increases the risk of frequent pain by two to five times (Battaglia et al. 2020). Given this fact, it is easier to understand why pain and anxiety are both prevalent issues

facing the United States population today. The link between one's mental health and physical pain was again strengthened by a 2015 study that found that depression and anxiety predict chronic pain, but chronic pain does not predict depression and anxiety (Lerman et al. 2015). These findings urge musicians to consider mental health needs when dealing with physical pain.

An important part of optimizing mental health is knowing how to incorporate meaningful things into everyday life. Instead of just questioning a technique like their bow hold, string musicians might consider how much time they are making for supportive and meaningful interaction with others. Community has been shown to improve resilience and also correlate to pain reduction (Che et al., 2018). Today, society relies more heavily on a digital existence, which can lead to feelings of isolation and lack of belonging. It is important to understand that loneliness and social exclusion double the risk for chronic pain (Allen et al. 2020). This points to the need for individuals to establish a meaningful community or to do something as simple as reaching out to a friend. Relationships are essential for cultivating a sense of purpose and belonging. Establishing a meaningful community is but one piece of the puzzle when it comes to bolstering resilience.

The Role of Sleep

The second piece worth examining in the pain puzzle is sleep. It turns out that sleep quality and quantity both matter. Sleep duration and injury risk are inversely related (Grier et al. 2020). A 2021 study found that poor sleep is the most significant risk factor for a pain flare-up (Costa et al. 2021). In fact, for individuals suffering from chronic low back pain, chances that sleep may be disturbed, short, or poor in quality are significantly increased, as is the time it may take to fall asleep (Kelly et al. 2010). However, the good news is that restorative sleep predicts the resolution of widespread pain (Davies et al. 2008).

Several methods prove useful in an effort to improve sleep. Improved sleep hygiene has been shown to enhance the quality of sleep. Concrete steps include going to bed and waking at consistent times; restricting stimulants such as alcohol, nicotine, and caffeine four to six hours before bed; and creating a quiet and cool (64°F–66°F) bedroom. Regular exercise, taking a warm bath or shower one hour before bed, using melatonin, and avoiding daytime naps also lead to improved sleep (Chung et al. 2017).

While useful, sleep hygiene practices do not always move the needle on restorative sleep enough for everyone. To improve chances of experiencing restorative sleep even further, try refocusing strategies like keeping a gratitude journal, writing down worries or concerns, listening to relaxing music, and using progressive muscle relaxation techniques. For individuals who are still struggling, it might be time to try various forms of psychotherapy. Cognitive behavior therapy and acceptance and commitment therapy both address mental health and allow a person to navigate their feelings. Both have been shown to improve sleep. Sleep restriction therapy, a method by which time in bed is limited and then adjusted for maximum efficiency, has also shown to be useful in sleep improvement, particularly when done in conjunction with one of the aforementioned forms of psychotherapy. In a study among college students, in-person and online cognitive behavioral therapy significantly affected sleep quality and quantity (Friedrich and Schlarb 2017). Findings indicate that online therapy and sleep restriction therapy are helpful for the reduction of insomnia (Majd et al. 2020; Morgenthaler et al. 2006; Vedaa et al. 2020), and directed therapy may help change unhelpful thoughts and behaviors impacting sleep and physical pain.

The Role of Self-Efficacy

The third piece in this puzzle of pain resolution is self-efficacy—a person's belief in their ability to succeed at a task or reach a goal. Cultivating confidence in the self is essential as it correlates with increased physical functioning, physical activity, and overall health (Martinez-Calderon et al. 2017). Low self-efficacy not only translates to physical sensitivity and pain intensity but also correlates with a greater chance of disease activity, physical disability, depressive symptoms, and fatigue (Martinez-Calderon et al. 2017). By these data, it is clear that health is affected by the intermingling of the physical and psychological states. Let us push a bit further and examine how expectations affect outcome. A 2016 study examined whether or not psychological factors are associated with physical therapy outcomes and found that the therapist's and patient's expectations predicted the recovery outcome more effectively than diagnostic testing (Chester et al. 2016). This is not to say that thoughts alone produce recovery. The physical work of rehabilitation must be done, but it is definite the psychological state also plays a role in recovery.

Building Resilience

In the puzzle of the pain dilemma, how much room does each piece take up? The short answer is that it depends on the individual and their level of resilience. Everyone deals with various aspects of life that consume their physical and emotional energy daily. Some stressors resolve quickly; some stick around for weeks or months. For a concrete example, we will examine a concept called the *cup of resilience* coined by physical therapist and chiropractor Dr. Greg Lehmann. He

asks people to imagine the self as an empty cup. Stressors enter life and fill up the cup. These stressors ebb and flow based on current situations, and if enough stressors enter the cup at one time, the liquid overflows in the form of physical pain. Incorporating healthy behaviors and support will counteract stressors and help build resilience.

For help with taking stock of what is in the cup, take a moment to list the things that are stressful in life. The list could include categories like work environment, commitment calendar, relationships with family or friends, and activities of dependents. Make a second list of healthy behaviors and helpful/supportive things that are or could become part of life. These could be things like exercise, meaningful relationships, time in nature, and time for relaxation. The list should speak deeply to the individual to be meaningful.

Examine both lists and identify a single category for change. Select either one thing to decrease (from the stressful list) or one to increase (from the supportive list). Then, establish a path toward adjusting it. It can be daunting to imagine changing current stressors, and it may be that the current situation does not allow for it. In this case, it may be more valuable to identify one healthy behavior or a form of support to increase.

It is important to set a reasonable and achievable small goal for action. For example, “spend time outdoors” may be on the supportive list. If a person's current level of outside time is almost non-existent (only short walks from the car to an indoor space), committing to an hour outside each day may be difficult and unsustainable. Instead, commit to making a small change, like walking outside and taking three deep breaths after breakfast, lunch, or dinner. Establishing the goal around something else that is already a part of a routine, like eating a meal, makes achievement much more likely. One tip—commit to doing this once in the next twenty-four hours—not every day at first! Establish success quickly and then build on that momentum by establishing another goal toward spending time outside. Once the habit is built for the new behavior, seek to increase ongoing commitment. Make the task or behavior so easy that there is no doubt it will be accomplished. Using this simple but effective strategy will allow time to be reallocated and lead toward healthier habits. Over time, the healthier habits will lead to a reduction, if not a complete resolution in physical pain.

A New Way Forward

The whole-person approach to treating the person experiencing pain includes more than addressing one's biology. It means addressing other psychosocial factors such as mental health, sleep, and self-efficacy for healing. It is up to the individual to decide what areas have the most significant effect and how impactful they may be. Developing healthy habits and establishing support in daily life may go far toward resolving physical pain. Asking a trusted friend or family member to

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check in regularly can also improve success and positively impact resilience (Dineen-Griffin et al. 2019).

Dealing with pain as a string musician is not hopeless. Examining how all areas of well-being work together to solve the puzzle of pain is a worthwhile next step. Healing and a life of greater function and less physical pain is possible.

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