



UNDERSTANDING THE PSYCHOLOGICAL COMPONENT OF PAIN: SYSTEMATIC REVIEW OF LITERATURE IN APPLYING POSITIVE PSYCHOLOGY TO ENHANCE PHYSIOTHERAPY OUTCOME

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ABSTRACT

This article examines the importance of psychological elements in the development of chronic pain and disability, with a particular focus on how basic psychological processes have been incorporated into theoretical models with physiotherapy implications. To that goal, an overview of how key psychological elements related with the experience of pain (such as forgiveness and self-efficacy) have been integrated into the primary models of pain and disability in the scientific literature is presented. Pain has evident emotional and behavioural effects that impact the development of long-term issues as well as treatment outcomes. These psychological aspects, however, are not frequently analyzed in physiotherapy clinics, nor are they used effectively to improve treatment. Based on a review of the scientific literature, it is clear that psychological processes influence both the feeling of pain and the treatment outcome; therefore, including psychological principles into physiotherapy treatment could improve outcomes.

Methodology/Approach: Established theories and constructs are studied to understand the relationship between psychological pain and physiotherapy outcome. This study is based on existing literature related to patient behaviour and human psychology. Research papers and books are retrieved from databases including Proquest, Ebsco, Elsevier, Emerald, Science Direct, Google Scholar and Research Gate.

Research Limitations: This research is purely based on study of earlier research. The findings should be corroborated by conducting empirical research.

Originality/ Value: The study establishes a strong linkage between psychological pain and its effect on effectiveness of the physiotherapy outcome.

KEYWORDS: Psychological pain, Positive psychology, Forgiveness, Self-Efficacy, Chronic pain

INTRODUCTION

The author had an experience treating a patient with Frozen Shoulder, a condition characterized by stiffness and pain in the shoulder joint. The patient was an unmarried female in her early 50's, from a lower-class family with little literacy. She lived with her elder brother who was married with two kids. Initially, they enjoyed being together as a family, but later the patient's sister-in-law started believing her as a burden as she wasn't earning and as her husband was the only breadwinner of the family. The patient faced numerous verbal assaults from her family leading to her facing trauma physically as well as mentally. The mental trauma she was going through further triggered the pain at Spinal Cord and Thalamus by pain fibers. However, the author did treat her holistically, giving her a chance to vent out whatever she had buried inside her head and further exaggarating her condition. This is just a case

study to draw the reader's attention to why it is important to consider the psychological aspect of pain during the physiotherapy treatment as well. According to the author a lot of times this pain is confused with physical pain and tried to be treated with medication.

Although the link between physical and mental health is well acknowledged, many health professionals have stated that they are unprepared to handle patients' physical and mental health needs. The mental health of patients undergoing treatment for physical problems in general hospitals is frequently overlooked. A survey of 480 health-care workers in a general hospital found that the majority believed they lacked the education and skills to diagnose psychological disorders in their patients, as well as the skills to give appropriate support. Nurses caring for elderly adults hospitalized to a general hospital for treatment of a physical ailment failed to notice when



mental health difficulties were linked to the underlying physical condition in a comparable study. Physiotherapy is essential in the treatment of the physical elements of musculoskeletal, cardio-respiratory, and neurological problems, as well as in the management of chronic pain and avoidable diseases like diabetes. However, one out of every four people with musculoskeletal illnesses also has a mental illness, and there is substantial evidence of mental health issues in patients with numerous pain sites, chronic pain, and conditions like chronic fatigue syndrome.

UNDERSTANDING PSYCHOLOGICAL ASPECT OF PAIN

Due to the sensory and affective components it incorporates, pain is a complex, multifaceted experience that is unique to each individual. The “unpleasantness” or suffering that comes with a painful occurrence is created by the affective component of pain, which comprises emotional, cognitive, and behavioural aspects. This affective component is critical because it has a big impact on how a person evaluates their overall well-being in relation to their pain experience. Pain has a far more profound effect on an individual than is usually apparent on the surface. Clinicians frequently make the mistake of adopting a more “clinician-centered” approach, focusing therapy sessions and teaching solely on pain reduction, range of motion restoration, and strength building. These are, without a doubt, key parts of effective treatment, and they are typically required for patients to recover to greater levels of functioning. However, if the focus of therapy is just on these objectives and fails to recognize and address the psychological and social factors that contribute to pain, the results will be far from ideal. Until each aspect of the patient’s pain is considered, from anatomic-physiologic to psychological, treatment cannot be considered to truly have a “patient-centred” approach.

While physiotherapists are educated on the psychological and sociological aspects of pain, these factors are all too often neglected and undertreated. In reality, many physiotherapists and other healthcare professionals may feel ill-equipped to address the emotional and behavioural changes that come with pain, especially because it goes beyond the typical anatomic and physiologic information that is more solidly within the area of practice. While physiotherapists do not have the same level of education as mental health professionals when it comes to the interplay of emotional, behavioural, and cognitive factors, they do have the ability to incorporate psychological strategies into treatment

sessions and interventions to help address the various non-anatomic aspects of pain.

As previously said, the psychological aspect of pain is frequently more restricting than the actual pain itself. As a result, this often-overlooked factor will outperform even the most effective treatment plans and initiatives. The psychological component usually comprises essential symptoms including low motivation and low self-efficacy, which can lead to emotional distress, problem-solving hurdles, and treatment participation difficulties. Patients with chronic pain, in particular, experience changes in their social networks, which can lead to interpersonal issues, loneliness, anxiety, and despair. Further stressors, such as the possibility of losing one's job or facing financial difficulties as a result of pain, might have a negative impact on therapy. In order to enhance treatment for both acute and chronic pain, it is critical to limit the presence of these emotional and social stresses during therapy.

MENTAL HEALTH IN PHYSIOTHERAPY

Not all physiotherapists are aware that mental health is the exclusive focus of their practice. The following remark, however, exemplifies this point: “There is no health without mental health.” Colleagues will be confronted with persons with weak mental health, chronic musculoskeletal problems, chronic pain, and psychosomatic disorders in their practice, whether consciously or unconsciously. Mental health issues are intertwined in their experiences. After all, people with mental illnesses suffer from a variety of physical ailments (cardiovascular diseases, metabolic syndrome, obesity, osteoporosis, and so on) as a result of medication, sedentary behaviour, or inactivity. As a result, it is critical for practicing physiotherapists to consider the mental health aspect of their patients' physical issues.

MODELS OF THE DEVELOPMENT OF PERSISTENT PAIN PROBLEMS

A number of theoretical models have been presented to describe how psychological factors may influence pain and disability throughout time in more detail. Most pain psychology researchers adhere to a broad, biopsychosocial formulation, while more detailed conceptual models show how psychological elements influence the shift from acute to chronic pain. Despite the fact that there are numerous theoretical viewpoints on pain and disability, we will discuss the five most generally referred to theories in contemporary pain psychology research. The five models show how the specific relationships and



mechanisms that exist between psychological elements are interconnected. As a result, they assist us in comprehending the progression of chronic pain and incapacity. Furthermore, each of these models emphasizes various mechanisms, which may aid us in

determining the most successful approaches to dealing with psychological issues.

Theory	Description	Psychological Processes Featured	Mechanism	Examples of Treatment Intervention Strategies
Fear-avoidance model	A painful injury may result in catastrophizing and fear, which lead to avoidance of certain movements. This behavior, in turn, leads to more avoidance, dysfunction, depression, and ultimately more pain.	<ul style="list-style-type: none"> · Cognitive interpretation featuring catastrophizing · Emotions: fear, worry, and depression · Attention: fear keys attention on internal stimuli (hypervigilance) · Behavior: avoidance of movement 	Activity avoidance leads to physical degeneration and social isolation; vicious circle	Promote physical and social activation (eg, with graded activity)
Acceptance and commitment model	Rigid beliefs (eg, that the pain must be cured) may block the pursuit of long-term life goals. Reducing futile attempts to achieve unrealistic goals (acceptance) produces flexibility and engagement in pursuing important life goals (commitment).	<ul style="list-style-type: none"> · Cognitive: flexibility in beliefs, life goals, and commitment · Emotions: anger and frustration · Behavior: commitment, pursuing goals 	Repeated (futile) attempts to control or alleviate pain lead to frustration	Provide realistic treatment goals and encourage client participation in decision making



<p>Misdirected problem-solving model</p>	<p>Normal worry about pain may tune the patient into certain ways of solving this problem (eg, medical cures). When this does not actually solve the problem (eg, with chronic pain or certain forms of musculoskeletal pain), it results in more worry and an even narrower view of the nature of the problem, making it less likely to actually solve the problem.</p>	<ul style="list-style-type: none"> · Emotions: worry as a driving force · Attention: pain demands attention · Cognitions: beliefs about cause of pain · Behavior: attempts to solve problem 	<p>Hypervigilance to pain symptoms contributes to rumination and failed attempts to escape pain; vicious circle</p>	<p>Redirect problem-solving efforts toward achievement of functional goals</p>
<p>Self-efficacy model</p>	<p>The belief that a person is capable of coping with pain is directly related to self-management; low self-efficacy, with feelings that the pain is uncontrollable cause physical and psychological dysfunction.</p>	<ul style="list-style-type: none"> · Cognitive interpretation: beliefs concerning controllability of pain · Behavior: coping skills 	<p>Fluctuating pain reduces perceptions of control and mastery over pain</p>	<p>Encourage self-care and self-management strategies, reduce dependence</p>
<p>Stress-diathesis model</p>	<p>Significant psychological stress and limited coping resources predispose a person to pain and being less prepared to deal with it. Thus, pain is more likely to result in functional difficulties and emotional distress.</p>	<ul style="list-style-type: none"> · Emotions: stress, depression, and anxiety · Behavior: coping strategies and skills 	<p>Protective psychosocial factors buffer the emotional impact of pain, whereas distress and emotional dysregulation predispose to pain</p>	<p>Improve stress management skills and social support</p>

Table 1: Summary of Psychological Models of Pain and Disability Highlighting the Psychological Processes Involved and Examples of Treatment Interventions



CONNECTION BETWEEN FORGIVENESS & PAIN

The link between forgiveness and holistic health is often neglected, especially when it comes to pain. We'll look at studies and develop a theoretical argument for forgiveness's applicability to a specific

sort of pain: chronic widespread pain (CWP). When looking at this type of pain, a picture emerges from a biopsychosocial model of health that reveals a significant link between social stress, coping, and forgiveness.

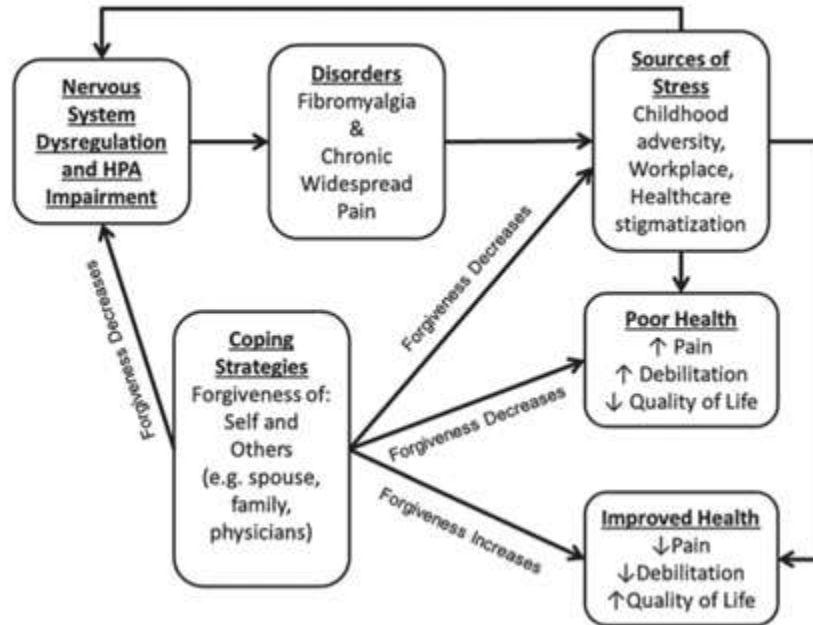


Fig 1: Conceptual model of the stressful consequences of fibromyalgia and chronic widespread pain and the role of forgiveness as a coping mechanism that positively impacts health (Toussaint et al. 2010)

The model represents frequent sources of stress for CWP and Fibromyalgia (FMS) sufferers, as well as the recognized health repercussions of this stress. The impact of stress on central and autonomic function (a hallmark physiological sign of FMS) is also illustrated in the model, as is the decreased functioning

of the hypothalamic-pituitary adrenal cortical axis (HPA) that is typically linked with FMS. Forgiveness is viewed as a coping technique that aids in the relief of common sources of stress, but it also has direct and indirect (through stress) consequences on health, nervous system function, and endocrine function.

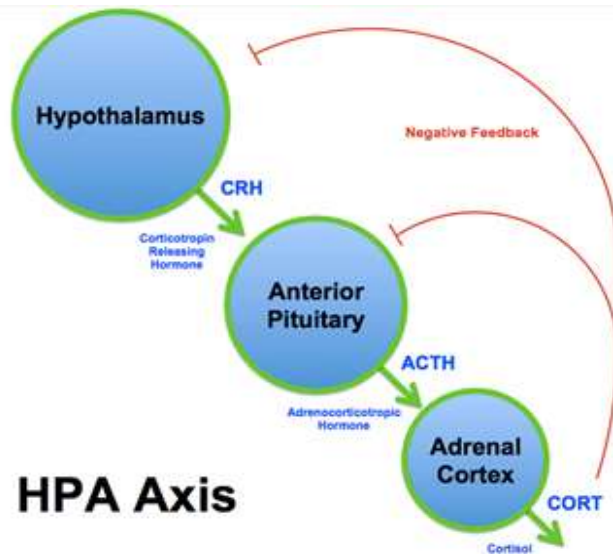


Fig 2: Hypothalamic-Pituitary-Adrenal (HPA) Axis

FMS is linked to debilitating generalized pain, fatigue, and sleep deprivation (Wolfe, Ross, Anderson, & Russell, 1995). Depression is a prevalent comorbidity among FMS sufferers (Uguz et al., 2010). Both disorders, as well as anxiety, have unfavourable consequences on pain severity, pain interference, functional limits, and quality of life that are independent as well as cumulative (Bair, Wu, Damush, Sutherland, & Kroenke, 2008). Patients with FMS have a decreased health-related quality of life and report diminished physical functioning (Neumann, Berzak, & Buskila, 2000). To help the organism adjust

physiologically to the threat, stressors stimulate the hypothalamic-pituitary-adrenal (HPA) axis and/or the sympathetic nervous system (SNS) (Black, 2003). FMS appears to be a stress-related syndrome, according to mounting research. The HPA axis and the SNS have both been shown to be dysfunctional in FMS studies (Martinez-Lavin, 2012; Williams & Clauw, 2009).

Given the relevance of stress to pain, a number of sources of stress that are particularly important, unique, and impactful for CWP and particularly for FMS are reviewed below.

Sources of Stress
Childhood adversity: Emotional, physical, sexual trauma
Workplace: Bullying, harassment, discrimination
Spouse, family, friends: Lack of affection and support from others; difficulties with parenting and marital strife
Healthcare stigmatization: Skepticism from healthcare staff, difficulties with insurance providers, misdiagnosis
Overcommitment: Levels of dissatisfaction with oneself, insecurity, and a lack of social recognition
Perfectionism: Dealing with exceedingly high and unreachable expectations for oneself and others
Anger: Anger at: (a) the person responsible for the injury/illness, (b) the health care provider, (c) the mental health professional, (d) the legal system, (e) insurance and third-party payers, (f) employers, (g) significant others, (h) God, (i) self, and (j) the whole world
Shame: Shame and self-blame over interference with activities of daily living resulting from pain; struggles with self-esteem and dignity

Table 2: Sources of stress for chronic wide-spread pain and fibromyalgia patients



As a result, studying coping is crucial since it can either lessen or exacerbate the effects of these stresses on pain and adjustment. Forgiveness is gaining popularity as a useful coping method for chronic pain sufferers. Forgiveness is a unique coping mechanism that includes affective, behavioural, motivational, and cognitive components (Strelan & Covic, 2006). Forgiveness appears to have health benefits in a variety of groups, including the general public (Toussaint, Williams, Musick, & Everson, 2001; Toussaint, Owen, & Cheadle, 2012), elderly blacks (McFarland, Smith, Toussaint, & Thomas, 2012), and patients with spinal cord injury (McFarland, Smith, Toussaint, & Thomas, 2012). (Webb, Toussaint, Kalpakjian, & Tate, 2010). Furthermore, in physical therapy outpatients (Svalina & Webb, 2012), chronic pain patients (Parenteau, Hamilton, Twillman, & Khan, 2008), and low-back pain patients (Parenteau, Hamilton, Twillman, & Khan, 2008), forgiveness has been demonstrated to be inversely connected to pain (Carson et al., 2005). Though forgiveness is frequently considered of as a personality trait, it can also be looked of as an emotion-focused coping technique for dealing with interpersonal and societal stress (Worthington & Scherer, 2004). The forgiveness process is analogous to the coping process in at least six ways: (a) is a reaction to a stressor, (b) involves appraisals, (c) is emotion regulation, (d) is future-oriented, (e) can be both intra- and inter-personal, and (f) is dynamic and unfolds over time (Strelan & Covic, 2006). Given the broad spectrum of interpersonal and social stressors that are unique and powerful contributors to CWP and FMS, forgiveness as an emotion-focused coping process would seem an ideal and productive response.

Case Study: The author had a patient with severe pain in his head and neck, both parts were bent to the left and no matter what he tried he couldn't straighten them. Surprisingly, no physical adjustment was indicated. Further muscle testing determined that one of the ex-colleagues he had met triggered the neck pain, surfacing judgments of anger and fear. Thus, the author explains the role of forgiveness, that is an active process in which you make a conscious decision to let go of negative feelings whether the person deserves it or not. As you release the anger, resentment and hostility, you begin to feel empathy, compassion and sometimes even affection for the person who wronged you. As the author counselled her patient through the forgiveness of the judgments, his head and neck slowly moved back into normal position. He could turn his head from side to side and said, "It's all better."

RELATIONSHIP BETWEEN SELF-EFFICACY AND CHRONIC PAIN MANAGEMENT

Several recent researches emphasize the link between cognitive-behavioral variables and low back pain (LBP), emphasizing the importance of psychological dysfunctions in determining chronic pain or disability. Poor pain-related self-efficacy, fear of mobility, and catastrophizing may be significant barriers to recovery; yet, they are potentially changeable with evidence-based treatment interventions. Pain catastrophizing, fear of movement, and avoidance behaviour, according to Vlaeyen & Linton's Fear-Avoidance Model, may lead to physical deconditioning and pain perpetuation in chronic LBP. One of the most important psychological factors influencing pain reactions is pain catastrophizing. It's characterized as "an excessive negative attitude toward existing or prospective pain experiences," and it explains a proclivity to misread or exaggerate seemingly dangerous situations. It can lead to greater pain sensitivity, trapping patients in a vicious cycle that may also affect their physical performance. Pain-related self-efficacy is described as the notion that people with chronic pain can carry out specific activities while being in pain. In individuals with LBP, poor pain self-efficacy is a more significant barrier to rehabilitation than various other psychosocial aspects. Patients with chronic LBP who have strong pain self-efficacy had higher levels of activity, working endurance, exercise/stretching performance, lower pain distress and severity, fewer maladaptive pain-related behaviours, reduced catastrophizing, and greater use of various coping methods (i.e., ignoring pain sensations, pacing). On the other hand, low self-efficacy is linked to long-term disability. In primary care patients with musculoskeletal pain, self-efficacy and fear avoidance attitudes are more relevant predictors of disability than pain severity and duration. Improvements in self-efficacy that occur during treatment are linked to improved function and lower self-reported pain.

ROLE OF POSITIVE PSYCHOLOGY IN UNDERSTANDING PAIN INTENSITY AND DISABILITY

Psychological discomfort and inefficient coping mechanisms are linked to more severe pain and physical limits in individuals with orthopedic illnesses, according to a significant body of research. However, little is known about the relationship between pain and physical restrictions and positive psychology (constructs that help people to survive and adapt to adversity).



In individuals with upper extremity disorders, emotional distress (such as depression and anxiety symptoms) and maladaptive coping techniques (such as catastrophic thinking in response to nociception) are consistently linked to higher pain and physical limits. However, identifying and resolving these aspects within the normal flow of orthopedic care is difficult, owing to the stigma attached to mental health difficulties and surgeons' apprehension about discussing these issues with their patients. The positive psychology approach, which emphasizes individual strengths rather than flaws, could bring new insight into the development of effective and acceptable interventions for this demographic. Positive psychology is concerned with more than just the absence of suffering or maladaptive coping. Rather, it emphasizes a person's talents and attributes of personal development and wellbeing. Positive psychology principles-based interventions have been linked to greater well-being and improved function. Such interventions may foster effective communication between physiotherapists and patients, and may increase the likelihood that patients would participate in psychosocial interventions.

Positive-psychology constructs such as satisfaction with life (one's level of individual subjective well-being), gratitude (one's tendency to recognize and respond with grateful emotion to general life events), coping through humor (seeing mirth within stressful experiences), resilience (the ability to bounce back or recover from stress), mindfulness (the awareness that emerges through paying attention on purpose, in the present moment, and nonjudgmentally to the unfolding of experience moment to moment), and optimism (the ability to remain positive in the face of stress have been consistently shown to confer beneficial effects for mental health and in coping with stress and chronic illness). Prior research has shown that among patients with upper extremity conditions, greater overall mindfulness is associated with lower pain intensity and that a 60-second mindfulness-based video exercise can improve momentary pain, anxiety, depression, and anger in this group. We have also shown that satisfaction with life buffers the effect of pain in individuals with upper extremity musculoskeletal disorders.

CONCLUSION

We all want our patients to believe that they can and will get well; that they will be able to run 6 kilometers every day, garden, and pick up their grandchildren. But how do you build self-confidence in someone else? Past experience, vicarious learning, verbal persuasion, and physiological sensations are the

four main sources of self-efficacy, according to research. (1) Past Experience: This is the most potent and important source of information. Self-efficacy is typically strengthened by previous experiences conquering similar problems; the assumption is that if you've done it before, you can do it again. Assist patients in recalling a time when they triumphed over a physical difficulty. Use this information to remind them of their own strength and resilience. (2) Vicarious Learning: Observing others succeed at the same or a comparable job typically leads to imitation. This encourages patients to assume that if the task isn't too difficult or beyond their existing abilities, they can succeed as well. The more similar the model is to the patient, the stronger the effect (for example, witnessing a 25-year-old guy do cat/cow is unlikely to boost your 75-year-old female patient's self-efficacy). (3) Verbal Persuasion: Respect your patient's concerns and fears; realize that they are valid, but when they appear ready, assist them confront and reframe those thoughts. We want to urge our patients to push themselves a little, to 'lean into the pain' a little, and to accept that some discomfort is normal. We want them to discover their own strengths and abilities, and to know that they have all the resources they need to improve; we're just here to help them along the way. (4) Physiological States: Negative emotional states (e.g., stress, worry, fear, etc.) are negatively connected with self-efficacy beliefs, whereas good emotional states (e.g., excitement, confidence, optimism) tend to boost them. People have learned to interpret their physiological state as a measure of competency; for example, if a patient suffers fear before performing an activity, they will likely take it as a sign that they lack the necessary skills. What's crucial to remember is that it's not just about feeling; it's about how the patient perceives and interprets that experience.

Future research should focus on how to include positive psychology strategies into existing treatments, such as composite CBT-programs for chronic pain sufferers. Positive psychology interventions should not be considered stand-alone treatments for this group of patients, although they may help to enhance the effectiveness of other treatments. Future research will look at whether and for which patients these techniques might be advised. Although the effects appear to be modest, they are significant enough to justify a larger randomized controlled trial. Moreover, it should be considered whether it is more beneficial to incorporate positive psychology techniques into composite CBT programs to optimize the profits for patients suffering from chronic pain problems.



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