



Role of Physiotherapy in Neuropsychosomatic Issues

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Received: July 11, 2024

Published: September 20, 2024

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Abstract

A wide range of disorders are referred to as neuropsychosomatic problems, in which psychological or emotional elements give rise to physical symptoms. These illnesses present particular difficulties since they call for a comprehensive strategy that takes the body and mind into account.

A group of mental illnesses associated with behaviour and brain function are referred to as neuropsychological disorders. These comprise ailments like bipolar illness, attention-deficit hyperactivity disorder (ADHD), dementia, Huntington's disease, Parkinson's disease, Alzheimer's disease and schizophrenia.

Keywords: Physiotherapy; Stress

Introduction

Term psychosomatic is derived from Greek word "psyche" (mind) and "soma" (body). In ancient times, "psyche" meant "soul or mind" and recently it has been referred to as behavior. Soma implies the body of organism [1].

Mental states impact body organs through a amalgamation of three interrelated components: neural, hormonal, and immunologic. The motor neurons in the brain are in charge of conscious control of voluntary motions such as clenching teeth. Teeth clenching under stress may also be caused by the same motor neurons, but it may not be a conscious or intentional action. Stress activates the sympathetic nervous system and the hypothalamopituitary-adrenal axis, which further reduces the immunological response. Stress-induced decrease in T-lymphocyte activity could not be hormone-mediated. Corticosteroid activation may result in the suppression of the immune system. A crucial psychosomatic system may be the individual-specific, although

unintentional, training of a particular conflict or stress to a particular physical defect. Because of activation of corticosteroid, the immune mechanism may be suppressed. Individual specific, however unpremeditated, conditioning of specific clash or stress to particular bodily malfunction might be a vital psychosomatic system. In spite of the fact that the immune system shields the body from the pathogens, it is affirmed that introduction to stress and excitation can diminish the immune system against the foreign bodies. It appears that the presentation to upsetting circumstances in life, like seclusion, will diminish the immune system of body [1].

The complex connection between the mind and body can be seen in the fragile connection between neuropsychological problems and psychosomatic disorders. Psychosomatic disorders, which are frequently based in psychological anguish or unresolved emotional issues, present physical symptoms without apparent organic origins. These illnesses, which are frequently linked to ailments like irritable bowel syndrome and tension headaches, demonstrate the significant influence that emotional moods have on

physiological processes. Conversely, neuropsychological illnesses impact behavior, emotions, and cognitive functions and result from malfunction in the structure or function of the brain. Despite having different roots, psychological distress and neuropsychological symptoms frequently coexist because of this. For instance, People with chronic stroke have various parts of their quality of life being negatively impacted, because of a prolonged reliance on caregivers and the inability to perform specific personal tasks and activities of daily living, which increases stress, depression, and anxiety. Stress, in turn, causes a host of somatic disorders, including hypertension, irritable bowel syndrome, tension headaches, and respiratory impairment brought on by sleep. Under severe circumstances, antidepressant use exacerbates a number of adverse effects that lead to neuropsychosomatic problems.

Psychosomatic disorders are an ambiguous issue, making it difficult to obtain a clear clinical diagnosis. There are many scientifically validated methods of stress reduction by working with the body [2]. Physiotherapy provides a holistic strategy that treats both the psychological and physical components, while standard medical solutions tend to focus on only one. In this piece, we examine the usefulness and possible advantages of physiotherapy in the treatment of neuropsychosomatic conditions.

Importance of addressing the neuropsychosomatic wellness

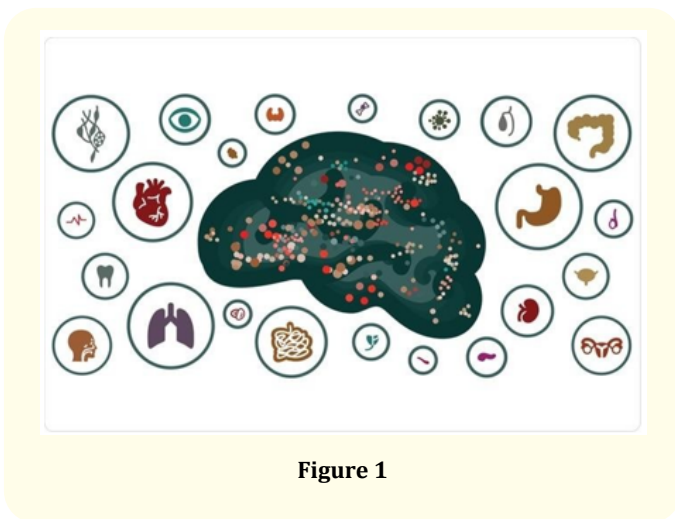


Figure 1

Stress increases and prolongs physical symptoms, decreases the threshold for seeking medical attention, and speeds up our decision to attribute unclear physical sensations to illness. There are two kinds of stress that matter: 1) little irritations and everyday issues that keep happening, and 2) significant life events and shifts that call for adjustment. Stress increases symptoms in two different ways. First, people under stress are more likely to assign unclear physical symptoms to disease than to normal physiology, as they might otherwise do, because stress is well known to be pathogenic. Second, anxiety and depression are brought on by outside stimuli and have their own accompanying physical and autonomic symptoms.

The pain threshold and pain tolerance are both lowered by anxiety. It also creates a feeling of physical menace and uneasy self-examination [3].

Therefore it becomes important to address the Neuropsychosomatic issues for following reasons:

- **Enhanced Quality of Life:** Distressing physical symptoms including chronic pain, exhaustion, gastrointestinal disorders, and cognitive dysfunction can be caused by neuropsychosomatic disorders, which can severely lower a person’s quality of life. Resolving these problems can enhance general functioning and well-being.
- **Improved Physical Health:** Mental and physical health are correlated with one another. Ignoring neuropsychosomatic problems can exacerbate physical symptoms and raise the chance of developing or exacerbating long-term diseases like diabetes, autoimmune disorders, and cardiovascular disease.
- **Improved Mental Health:** Anxiety, depression, and disorders linked to traumatic experiences frequently combine with neuropsychosomatic problems. By addressing these concerns, psychological distress can be reduced and the development or aggravation of more serious mental health conditions can be avoided.
- **Holistic Approach to Healthcare:** Taking into account the connections between the mind, body, and spirit, a holistic approach to healthcare entails treating the patient as a whole. By addressing neuropsychosomatic problems, one can recognise this interdependence and encourage all-encompassing care that takes a patient’s health into account.

- **Lower Healthcare expenditures:** Long-term healthcare expenditures can be lowered by managing neuropsychosomatic disorders in an early and efficient manner. This includes fewer trips to the doctor, less prescription use, and a decline in the number of hospital admissions for associated mental and physical health issues.
- **Better Functioning:** Neuropsychosomatic problems can cause problems with relationships, employment, and day-to-day functioning. By addressing these problems, people can enhance their general functioning, cognitive capacities, focus, and energy levels, which will enable them to participate more fully in their personal and professional lives.
- **Preventing Secondary problems:** Substance misuse, social isolation, and disability are examples of secondary problems that can arise from untreated neuropsychosomatic conditions. Proactively treating these factors can reduce the likelihood of getting such difficulties.
- **Enhanced Resilience:** Handling neuropsychosomatic disorders requires the development of coping mechanisms and resilience abilities. People can more easily handle life's obstacles and sustain their health and well-being over time by developing good stress management, emotional regulation, and positive attitude practices.

Addressing neuropsychosomatic issues is essential for promoting holistic health, improving quality of life, preventing secondary complications, and reducing healthcare costs. It requires a comprehensive approach that integrates medical, physical, psychological, and social interventions to support individuals in achieving optimal well-being.

Overview of role of physiotherapy in addressing neuropsychosomatic issues

For most clinicians, physiotherapy is an essential part of the therapeutic plan. 79% of 526 neurologists surveyed said that physiotherapy was at least somewhat beneficial and on par with psychotherapy alone [6]. Physiotherapy was most frequently used in conjunction with multidisciplinary care and took a motor learning approach. The use of transcutaneous electrical nerve stimulation (TENS) machines and distraction tactics were examples of novel approaches. There have also been descriptions of deceptive behavioural methods. Physical treatment was found to be beneficial in the majority of studies, including those with long-term follow-up [6].

As a result of psychiatric and social difficulties being relieved, physical activity has been shown to enhance psychic patients' physical and mental health. Exercise has actually been linked to improvements in social interaction, physical body perception, etc. according to research. Meditation and breathing exercises, or pranayama, are very helpful stress relievers for mentally ill individuals. Holding the breath causes the muscles to tense, which temporarily rejects stress, fear, and other influences. Psychosomatic patients' thoughts and feelings change when the duration is extended [7].

Physiotherapists perform comprehensive evaluations in order to comprehend the patient's functional constraints, psychological issues, social environment, and physical symptoms. This thorough assessment assists in identifying neuropsychosomatic problems and customising therapies to match the needs of the person. Physiotherapists use a range of methods, including therapeutic exercise, manual treatment, and modalities like heat and cold therapy, to reduce pain that is linked to neuropsychosomatic disorders. Physiotherapy can enhance mood, sleep, and general quality of life by treating physical discomfort. Individuals with neuropsychosomatic diseases can benefit from structured exercise programmes that are intended to increase physical fitness, lessen fatigue, and improve mood. Endorphins are released during exercise and are natural mood enhancers and painkillers that improve general wellbeing.

Using cognitive-behavioral methods including mindfulness-based stress reduction, cognitive restructuring, and relaxation training, physiotherapists target maladaptive beliefs and behaviors that fuel neuropsychosomatic symptoms. These methods encourage calmness, a decrease in stress, and enhanced coping mechanisms. In addition to teaching patients self-management techniques to help them deal with their conditions more effectively, physiotherapists also educate patients on the mind-body link. In order to prevent symptom exacerbation, this may involve stress reduction methods, ergonomic guidance, and activity adjustment. Using graded exposure and activity pacing, physiotherapists assist patients in progressively increasing their levels of physical activity. This method assists people in overcoming fear-avoidance behaviors and regaining faith in their capacity to carry out daily tasks without exacerbating their symptoms.

Occupational therapists, psychiatrists, psychologists, and pain experts collaborate with physiotherapists to offer comprehensive therapy to patients with neuropsychosomatic conditions. This multidisciplinary approach guarantees a thorough treatment of all facets of the illness.

Physiotherapists are active in the promotion and prevention of health, particularly mental health, as health care providers. It is their duty to provide people with appropriate mental health information, dispel myths regarding mental disease, and, if needed, send them to licenced mental health and psychiatric specialists [10].

The goal of physical therapy for people with neuropsychosomatic disorders is to increase their level of independence, mobility, and physical function. Physiotherapy helps people reach their goals and engage more fully in daily life by addressing physical impairments and optimizing functional capacities.

Understanding the neuro psychosomatic connection

The connection between the mind and body is fascinating. In medical practice, understanding this connection is incredibly important. Understanding that emotional states can impact our physical health and can even cause illness is important. It is the basis of psychosomatic disorders [8].

The nervous system is a complex network that regulates every bodily function. This covers both voluntary and involuntary functions (e.g., breathing, digesting, moving). Knowing how the nervous system functions and how stress affects it might make it clearer how our emotional states affect our physical health and potentially lead to psychosomatic disorders. Research has demonstrated that the vagus nerve, a crucial component of our neurological system, directly mediates a wide range of bodily functions. On the other hand, excessive stress can over activate the nerve, leading to symptoms including nausea and abdominal pain. It has also been connected to anxiety and depression [8].

Research has also demonstrated the profound effects that trauma, in particular, can have on the vagus nerve, which can leave a patient in a fight-or-flight mode all the time. Studies consider doing in order to treat this. This may make it possible for the body's stress response to be more appropriately regulated [8].

The current so-called strong neuroscientific trend, concerning mental and psychosomatic disorders, emphasizes one side of the problematic mind-body relationship—that is, the body, and more specifically, the brain. The brain imagery techniques and molecular biology have contributed to this process, because the brain and its functions were previously never investigated as well as by means of positron emission tomography (PET), functional magnetic resonance imaging (fMRI), and single-photon emission computed tomography (SPECT). The strong program presumes that everything that needs to be known can be discovered by means of probing more deeply into the brain and understanding its functioning [9].

Physiotherapy approaches to neuropsychosomatic wellness

Since mental health and physical health are intertwined, patients should receive the proper physiotherapy intervention. A “rollercoaster” of emotions, including feelings of anxiety and pain, are often associated with more severe physical conditions like obesity, epilepsy, cancer, cerebrovascular diseases (stroke), rheumatoid arthritis, hypertension, diabetes mellitus, metabolic syndrome, asthma, asthma/chronic obstructive pulmonary disorder (COPD), cancer, and other diseases. After all, because of medication, sedentary behaviour, or inactivity, people with mental illnesses often experience several physical health complaints (metabolic syndrome, obesity, osteoporosis, cardiovascular diseases, etc.) and seek primary health care [10].

The ultimate objective of physical therapy is to encourage an active lifestyle, good posture, and the modification of bad habits. Preventing relapses and practicing self-management are the main goals. This treatment incorporates various modalities, including cognitive techniques like cognitive restructuring, problem solving, and cognitive functional training; behavioural techniques like relaxation, pacing, graded exercise therapy, and behavioural activation; supportive and educational techniques; and other techniques like movement and body awareness, relapse prevention for adults and children, as well as (bio-) feedback [10].

Physical activity has several health benefits, including enhanced cardiovascular fitness, better sleep, higher endurance, a favourable impact on diabetes and metabolic syndrome, stress reduction, mood enhancement, more energy, and less fatigue. Exercise enhances self-esteem, cognitive abilities, and quality of life while lowering anxiety, depression, bad mood, and social isolation [10].

- **Hers's how it can help:** Detailed Assessment: To comprehend the intricate interplay between the neurological, psychological, and physical components causing Neuro psychosomatic problems, physiotherapists carry out detailed exams. This thorough assessment assists in customising therapy regimens to meet the unique requirements of every patient.
 - **Physical Rehabilitation:** Physiotherapists are qualified to diagnose and manage a broad spectrum of physical ailments that may be associated with neuropsychosomal disorders. This could involve neurological diseases, mobility difficulties, chronic pain syndromes, and musculoskeletal injuries. The goals of physical therapy include enhancing mobility, quality of life, and physical function through manual therapy, focused exercises, modalities like TENS (transcutaneous electrical nerve stimulation) can effectively manage pain associated with neuropsychosomatic conditions and other interventions.
 - **Pain Management:** Physiotherapy provides a range of strategies to successfully manage pain, as chronic pain is frequently a component of neuro psychosomatic disorders. This could involve acupuncture, heat or cold therapy, electrotherapy, manual therapy, and therapeutic exercises. Physiotherapy can help lower pain levels and enhance general wellbeing by addressing the psychological and physical components of pain, including stress and anxiety.
 - **Psychological Support:** To offer patients with neuro psychosomatic problems full care, physiotherapists frequently work in conjunction with psychologists or other mental health specialists. The rehabilitation programme may incorporate mindfulness exercises, cognitive-behavioral approaches, relaxation exercises, and stress management tactics as part of this interdisciplinary approach. Physiotherapy addresses the psychological components of the illness and enhances resilience, emotional well-being, and coping mechanisms.
 - **Education and Self-Management:** Physiotherapists instruct their patients on the physical, psychological, and neurological aspects of their ailment as well as how to take care of it. Patients can actively manage their disease by changing their lifestyle, implementing ergonomic changes, and practicing self-care by realising how interrelated their symptoms are. Providing patients with the information and abilities to govern themselves is an essential part of physiotherapy treatment.
 - **Stress Management Strategies:** To help patients lower their stress levels and relieve physical symptoms, physiotherapy integrates stress management strategies such deep breathing exercises, mindfulness exercises, and relaxation exercises. Physiotherapy can assist in ending the cycle of symptom worsening brought on by psychosocial variables by treating stress.
 - **Cognitive-Behavioral Techniques:** These methods are employed to recognise and confront harmful cognitive patterns and actions that might be linked to physical symptoms. Patients can see changes in their physical and mental health by treating maladaptive thinking habits.
 - **Multidisciplinary Collaboration:** To provide patients with neuropsychosomatic problems with comprehensive and well-coordinated care, physiotherapists collaborate closely with neurologists, psychiatrists, occupational therapists, and primary care physicians. This cooperative method enables thorough evaluation, customised treatment planning, and continuous progress tracking in several health domains.
- Well-balanced and regularly executed endurance activities (walking, biking, jogging and swimming) power training (fitness training) and mindfulness-derived exercises) augment physical and mental resilience; improve the quality of sleep; enhance self-confidence, energy, endurance and relaxation; and, in general, decrease physical complaints [10].
- Depending upon the goals and the competence level of the patient, the therapist can choose among a more health-related approach (to improve physical activity and to limit sedentary behaviour), a more psychosocial-related approach (to learn skills that are not only physical but also cognitive and communicative) or a more psychotherapeutic-related approach (to stimulate the patient to get in touch with his or her inner world). When persons with mental health problems are invited to (group) physical activities, they come out from their comfort zone and experience how they function. The combination of experience and insight drives changes and leads to new experiences. Specific approaches for eating disorders, schizophrenia, mood disorders and depression and anxiety are developed [10].

Conclusion

In 2006 Stora published *La neuro-psychoanalyse*, the first book in French on neuropsychanalysis, which he attempts to ground in an epistemological model integrating psychosomatics, psychoanalysis and neuroscience, to build a solid platform for interdisciplinary research. He critiques neuroscientific models which view the mind/body as a “biological automaton” and instead draws on complexity theory to argue for a model of “the living organism” where “new properties will emerge at each level...At the highest level we find the ‘psychic apparatus’ as described by Freud, and it is interrelated with the central nervous system. Such a model could form the basis for a neuropsychanalysis” (Stora 2004, 123-4). He argues that classic ‘mind-brain’ neuropsychanalysis should incorporate a neuropsychosomatic perspective, including neurohormonal and neuroendocrine systems, stating that: “Man is not only neuronal but basically psycho- neuro-hormonal” (Stora 2007b, 232) and proposes a neuropsychosomatic approach to Freud’s psychosexual stages “to make these into comprehensive organizations that are no longer restricted to the psychic apparatus...giving way to a continual process of integration of the psyche, the organic functions, and the central nervous system” (Stora 2007b, 232). In his latest book, *When the Body Displaces the Mind*, which Mark Solms called “the first neuro-psychoanalytic foray into the fascinating and important field of psychosomatic medicine”, Stora (2007b, 232-3) claims “it is no longer a question of psychosomatic diseases but the role that the psyche plays in all diseases without actually being their cause.

The psyche participates in the defence of both the organism and the immune system, and it must be examined in relation to the somatic functions and organs.” Here Stora argues against the compartmentalization of science at a time when as Solms writes “the boundaries between disciplines have recently been seriously challenged in the neurosciences” (Solms, in Stora 2007a), as divisions preventing more comprehensive attempts to address the complexities at the mind-body interface, which he sees as a major challenge for 21st century thought [4,5].

The promotion of holistic healthcare approaches, improvements in physical and mental health, and an improvement in quality of life are just a few of the reasons that highlight the need of addressing neuropsychosomatic disorders. Early diagnosis and treatment of

these problems can also reduce medical expenses and avert further difficulties.

A detailed analysis is conducted on the function of physiotherapy in treating neuropsychosomatic disorders. In addition to providing physical rehabilitation, pain management, psychological support, education, stress management techniques, and cognitive-behavioral methods, physiotherapists carry out thorough evaluations. Working together with other medical specialists guarantees a multidisciplinary strategy for all-encompassing patients care.

The neuro-psychosocial relationship is also covered in the text, with special emphasis on how emotional states affect physical health and how the neural system controls many body processes. It is emphasised how crucial it is to treat patients holistically, taking into account both their bodily and psychological needs. Further studies required to focus more on the neuro psychosomatic aspects of health and wellbeing .

The article concludes by arguing for a thorough comprehension of neuropsychosomatic illnesses and a treatment strategy that integrates knowledge from psychoanalysis, neuroscience, and psychosomatic medicine. To effectively treat the intricacies of these illnesses, interdisciplinary teamwork and the integration of psychological, physiological, and social aspects are required.

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