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# Increased Collaboration between Neurological and Musculoskeletal Physiotherapists

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#### Description

Neurological experience with patients in physiotherapy provides stories that relate to hope and this informs the way they understand it. It is important that when considering therapeutic outcome, the physiotherapists recognised the need for having a realistic hope and the danger of having a false hope. However, both were balanced with the need to accept that the unknown was possible and not limiting this or losing their dream. Where hope in relation to recovery was not possible, hope in other areas of life was emphasised. The implications of this dynamic process of working with different kinds of hope in relation to people with neurological disease are considered.

#### Intervention

Physiotherapy is concerned with human function and movement and maximizing physical potential. It includes services provided to individuals and populations to develop maintain and restore maximum movement and functional ability throughout the lifespan, and it is concerned with identifying and maximizing quality of life and movement potential within the spheres of promotion, prevention, treatment/intervention and rehabilitation. It uses physical means to promote, maintain and restore a bio psychosocial model of the individual's health. It relies on scientific evidence to discuss, evaluate and review its practices. However, despite the need for economic evaluations in evidence-based clinical practice, there are still a reduced number of scientific publications on physiotherapy in Spain that include economic analyses, and their methodological quality is poor. Economic evaluations of health interventions involve a comparative analysis of numerous interventions relating the differences in costs to the differences in the effects of such interventions. These economic assessments are mainly implemented using four methods: Cost-minimization, costbenefit, cost-effectiveness and cost-utility. The costminimization analysis assumes that interventions achieve equivalent benefits and seeks to establish which intervention is associated with lower resource consumption. Cost-benefit analyses express both the costs and the effects of interventions in monetary terms, making it easier to compare them with the costs of such interventions. On the other hand, the costeffectiveness analysis estimates the incremental cost per unit of effects when considering effects in common with the

interventions being compared, and it is based on natural units. Ultimately, the cost-utility analysis is considered by some authors to be a variant of the cost-effectiveness analysis, in which the unit of effect is a generic measure of health, such as Quality-Adjusted Life-Years (QALY) that takes into account both the health-related quality of life and the increase in life expectancy obtained as a result of the intervention.

## Neuroplasticity

One of the issues to consider in an economic evaluation of interventions is the perspective of the study, which is the point of view adopted when deciding which types of costs and health benefits will be included in the economic evaluation. Typical viewpoints are those of the patient, hospital/clinic, healthcare system or society. Therefore, a health economic evaluation can be conducted from one or more perspectives, such as the societal perspective, the healthcare payer perspective or the patient perspective. The perspective used in a study is determined by the purposes of the research and also by methodological issues. Likewise, the perspective determines which types of costs are included in the analysis because they are relevant to their interests. For instance, societal perspectives and patient perspectives include indirect costs (such as time lost during transportation to the health centre) and intangible costs (such as pain and suffering) besides other types of costs included in payers' perspective, such as direct medical costs (hospitalization, diagnostic procedures, outpatient visits, etc.). Subsequently, the perspective taken in an economic analysis can have an important influence on how an intervention is assessed and the results obtained and interpreted. Neurological disorders and conditions affect the functioning of an individual and produce disabilities or limit activities and social participation. Neurological disorders, neurological impairments and squeal constitute over 6% of the global burden of disease. In addition to causing mortality and disability, people with neurological diseases experience individual suffering, suffering in their families and their community and social and economic losses. This results in a decrease in their productivity and quality of life. Evidence is emerging for central nervous system (CNS) changes in the presence of musculoskeletal dysfunction and pain. Motor control exercises, and potentially manual therapy, can induce changes in the CNS, yet the focus in musculoskeletal physiotherapy practice is conventionally on movement

impairments with less consideration of intervention-induced neuroplasticity changes. Studies in healthy individuals and those with neurological dysfunction provide examples of strategies that may also be used to enhance neuroplasticity during the rehabilitation of individuals with musculoskeletal dysfunction, improving the effectiveness of interventions. In this paper, the evidence for neuroplasticity changes in patients with musculoskeletal conditions is discussed. The authors compare and contrast neurological and musculoskeletal physiotherapy clinical paradigms in the context of the motor learning principles of experience-dependent plasticity: part and whole practice, repetition, task-specificity and feedback that induce an external focus of attention in the learner. It is proposed that increased collaboration between neurological and musculoskeletal physiotherapists and researchers will facilitate new discoveries on the neurophysiological mechanisms underpinning sensorimotor changes in patients with musculoskeletal dysfunction. This may lead to greater integration of strategies to enhance neuroplasticity in patients treated in musculoskeletal physiotherapy practice.