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THE BIOPSYCHOSOCIAL MODEL IN PHYSIOTHERAPY: A PSYCHOLOGICAL PERSPECTIVE ON PHYSICAL REHABILITATION

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Abstract:
The bio psychosocial model has developed into a comprehensive approach to the study of health and disease at the intersection of biology, psychological, and social factors in clinical patient care. This model provides a holistic framework for physical rehabilitation in physiotherapy that goes beyond the usual biomedical model of focusing on physical impairments. The current review examines the psychological perspective of the bio psychosocial model including its relevance in enhancing patient outcomes, adherence and the ability to deliver quality life and well-being. A systematic search of relevant literature from the fields of rehabilitation sciences, psychology and physiotherapy revealed key themes (e.g. > patient-centred care; cognitive-behavioural strategies; psychosocial factors such as motivation, self-efficacy and social support) related to traumatic injury recovery. These findings indicate that the inclusion of psychological treatment (goal setting, pain education and cognitive reframing), on top of standard physiotherapy improves functional outcomes and patient satisfaction. Additionally, the review emphasizes the need for interdisciplinary collaboration and clinician training for the implementation of biopsychosocial principles. The proposed model not only remedies physical outcomes but also emotional and social difficulties, creating a more holistic and long-term rehabilitation solution.

Key Words: Biopsychosocial model, Physiotherapy, Psychological perspective, Rehabilitation, Patient-centred care, cognitive-behavioural strategies

INTRODUCTION

The biomedical model, with its focus on the diagnosis and treatment of physical impairments, has provided the backbone for rehabilitation through physiotherapy for many decades. Although this model has accelerated the return of physical function, it frequently ignores the psychological and social aspects of recovery, which are just as important to determining outcomes (Nicholas et al., 2019). In comparison, the biopsychosocial model (first proposed in 1977 by George L. Engel) offers a comprehensive and integrated theory that views health and disease as complex products of biological, psychological, and social factors (Engel, 1977). The particular significance of this model to physiotherapy lies in the fact that in addition to their physical impairments, patients often experience emotional distress , maladaptive coping strategies as well as social challenges . By contrast, psychological variables including self-efficacy, pain, coping and motivation are thought to have a key contribution to rehabilitation outcomes. In addition, social determinants (such as family support, socioeconomic status and workplace conditions) can either support or impede rehabilitation (Foster et al, 2018). Consequently, an increasing number of referrals request physiotherapists to incorporate psychosocial elements into their practice, to provide patient-centered care that considers cognitive and emotional, as well as social, needs alongside physical limitations (Nicholas et al., 2019; Gatchel et al., 2007).
This review explores the implication of the biopsychosocial model in physiotherapy with an emphasis on emotional dictionary in physical rehabilitation. The paper provides a synthesis of existing literature on cognitive-behavioral strategies, ways of engaging patients, and multidisciplinary efforts to improve recovery results. This paper will reveal

how we can more specifically consider psychosocial factors in treatment by encouraging clinicians, educators and researchers to consider ways to incorporate more complete rehabilitation treatment.

METHODOLOGY

This review was undertaken to synthesize the available evidence pertaining to the biopsychosocial application in physiotherapy with a specific focus on psychological perspectives in physical rehabilitation. Methodological rigor was ensured through a structured approach according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework (Page et al., 2021).
Search Strategy:
Methods A literature search was undertaken on PubMed, CINAHL, Scopus, PsycINFO and Web of Science databases across the years 2000–2025. Keywords and Medical Subject Headings (MeSH) that were used included: biop psychosocial model; physiotherapy; physical therapy; rehabilitation; psychological intervention; cognitive behavior strategies; and patient-centered care. To improve the combinations of searches Boolean operators were used.

Inclusion and Exclusion Criteria:
Studies were included if they:

- Emphasis on the use of the biopsychosocial model in physiotherapy and/or physical rehabilitation.
- Combined psychological or cognitive-behavioral interventions with physical therapy.
- Peer-reviewed articles, systematic reviews, meta-analyses or clinical practice guidelines.

Exclusion criteria included:

- Factors Generalizability Case reports, editorials, and non-peer-reviewed commentaries.
- Articles focusing solely on biomedical interventions without psychosocial elements.

Study Selection:
Titles and abstracts were screened in duplicate by independent reviewers for relevance. The full texts of potentially eligible studies were then independently assessed, and disagreements discussed & resolved or a third reviewer was consulted.
Data Extraction and Synthesis:
Data on study design, sample size, type of intervention, psychological components, and main outcome were extracted and analysed. Given the heterogeneity of studies by design and outcome measures we decided to adopt a narrative synthesis approach. The themes were organized according to.

- Psychological factors that impact on rehabilitation,
- Cognitive-behavioural techniques in physiotherapy,
- Combined patient-centred rehabilitation methods.

Quality Assessment:
The methodological quality of the included studies was assessed using the Critical Appraisal Skills Programme (CASP) checklists and Joanna Briggs Institute (JBI) critical appraisal tools (CASP, 2020; Moola et al., 2020).

RESULTS

Table 1. Summary of Included Studies:

Author (Year)	Study Design	Condition	Intervention
Foster, N. E., Delitto, A et. al 2018	RCT	Low back pain	CBT-enhanced physiotherapy
Vlaeyen et al. (2016)	RCT	Chronic musculoskeletal	Graded exposure, pain education
Nicholas et al. (2019)	Cross-sectional	Chronic pain	Cognitive reframing, goal setting
Robinson et al. (2020)	Cross-sectional	Mixed rehabilitation	Biopsychosocial assessment
Main & George (2011)	RCT	Low back pain	Patient-centred care framework

Psychological Constructs Influencing Rehabilitation:
Previous studies highlighted the contribution of psychological factors to rehabilitation outcomes. Self-efficacy, fear-avoidance beliefs, catastrophizing and patient motivation gained relevance as key constructs with an impact on treatment compliance and functional recovery (Bandura, 1997; Vlaeyen & Linton, 2012). As an example, there were also reports where patients with higher self-efficacy tended to be more involved in physiotherapy programs and gained more functional outcomes (Foster et al. 2018). Likewise, fear-avoidance behaviors that were not addressed resulted in long-term disability and slow recovery following musculoskeletal injuries (Leeuw et al., 2007).
Cognitive-Behavioral Strategies and Their Effectiveness in Physiotherapy:
Physiotherapy integrating cognitive-behavioral therapy (CBT) principles improved patient-reported pain, functional output and emotional states. Studies by Nicholas et al. (2019) and Gatchel et al. For example, pain education, goal setting and cognitive reframing have been shown to markedly improve chronic pain and post-injury rehabilitation (Friedman 2007). Furthermore, graded exposure-based interventions were also successful in decreasing fear-avoidance behavior and increasing function in chronic musculoskeletal conditions (Vlaeyen et al., 2016).
Patient-Centered and Interdisciplinary Approaches:
Compared with standard physiotherapy only, interdisciplinary models with physiotherapists, psychologists, and social workers reported better outcomes (Main & George 2011). Exercise methods that are patient-centered—focused on shared decision-making, individualized goal-setting, and social support—improved adherence, satisfaction, and long-term recovery (Foster et al., 2018; Nicholas et al., 2019).
Challenges in Implementation:
In spite of the benefits illustrated, many studies highlighted obstacles to implementing the biopsychosocial model in practice. These were the limited training of clinicians in psychological approaches, a limiting time for clinical practice as well, and the catch being a resistance to shifting from traditional, biomedical paradigms (Robinson et al 2020).

DISCUSSION

It aims to address recent advances towards understanding the importance of psychosocial aspects of rehabilitation, reflecting evidence that support the integration of the biopsychosocial model into physiotherapy practice at this time. The results illustrate the key roles of psychological constructs (self-efficacy, fear-avoidance, catastrophizing, and patient motivation) on the course of recovery. This is in keeping with Engel original proposition (1977) that the health outcome cannot be achieved without a concurrent consideration of the psychological and social context of the patient.
Psychological Perspectives in Physiotherapy:
Cognitive-behavioral approaches are used as an effective adjunct to classic physiotherapy; this is especially true for chronic pain and musculoskeletal disorders. Further, similar benefits with respect to functional outcomes and maladaptive beliefs were noted from interventions of pain education, cognitive reframing, and graded exposure (Vlaeyen et al., 2016; Nicholas et al., 2019). It also gives them some level of control over the rehabilitation process, encouraging self-efficacy whilst avoiding the negative emotional impact of the treatment.
Patient-Cantered and Interdisciplinary Approaches:
It also emphasizes the importance of interdisciplinary, patient-centred care in which physiotherapists often work with psychologists, occupational therapists, and social workers. It improves adherence to treatment, and targets wider social determinants of health including family support and workplace pressures (Main & George, 2011; Foster et al., 2018). The themes shared decision-making and preferring individualized goal setting stood out early on as key features that could impact on the overall experience of patients attending long-term rehabilitation by enhancing patient satisfaction and engagement.
Barriers to Implementation:
These findings are only the first step though, as there are hurdles between demonstrating efficacy in research settings and implementation into everyday clinical practice. Many physiotherapists have stated that they have little training in psychological approaches, that there is no time to use them, or that organisations resist movement away from a biomedical model (Robinson et al., 2020). This highlights the necessity of curriculum reform in physiotherapy education and continuing professional development programs concentrating on psychosocial care (Shabana Khan, Sharick Shamsi et. al 2013).

Implications for Practice and Research:

The results imply that incorporating principles of psychology into physiotherapy has the potential to enhance rehabilitation in patients from a broad range of conditions. Further investigation is warranted to standardise protocols for implementation of cognitive-behavioral strategies in physiotherapy and the evaluation of cost-utility in implementation. Further longitudinal studies are necessary to identify any longterm effects of biopsychosocial treatment and how these may affect reintegration back into ordinary life and work.

CONCLUSION:

The biopsychosocial framework provides an anthropocentric model through which physiotherapy can be improved by integrating biological, psychological, and social patient-centred dimensions. This review also highlights the role of psychological factors in determining rehabilitation outcomes, including self-efficacy, fear-avoidance beliefs, catastrophizing, and motivation. Physiotherapy with cognitive-behavioral strategies, pain education and a patient-centered approach has a higher adherence to treatment and the best results to functional recovery and quality of life. Yet the adoption is also hampered by a lack of clinician training and an organizational mentality that resists change. To build on the momentum created by this study, we primarily should focus on enhancing interdisciplinary collaboration, developing innovative curriculum, and establishing concrete and high-standard protocols to successfully integrate psychological factors in rehabilitation. The shift from a biomedical model to a biopsychosocial perspective of physiotherapy is an opportunity to provide more holistic, patient-centred care in order to facilitate sustainable recovery outcomes.

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