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ADVANCED BIOPSYCHOSOCIAL APPROACH AND MUSCULOSKELETAL PAIN

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ABSTRACT

Background- The biopsychosocial model of pain currently dominates clinical understanding of chronic pain. Pain and disability are characterized by the biopsychosocial approach as a multidimensional, complex integration of physiological, psychological, social factors that affect one another. Aim To retrospect the literature focusing on a biopsychosocial model and chronic musculoskeletal pain. Method We searched the databases from Pubmed, google scholar, web of science, Embase with keywords (biopsychosocial model, chronic pain, musculoskeletal pain, physical therapy, PNE) between the period of 2013 to 2021 Result We reviewed 108 articles out of which 22 articles were included in the study. These were the few studies focusing mainly on the biopsychosocial approach in musculoskeletal conditions. Conclusion Patients with musculoskeletal pain need a therapeutic approach that combines basic clinical treatment with a biopsychosocial model for effective pain management. Also, there is a need for precise treatment protocol for PNE which physical therapists can easily administer in their day-to-day practice.

Keywords : Biopsychosocial Model, Musculoskeletal Pain, Pain Neuroscience Education(PNE)

Introduction

The concept of the biopsychosocial model of Pain was first given by George Engel. The biopsychosocial paradigm assesses the "whole person," including the mind and body as interconnected structures, and recognizes biological, psychological, and social aspects of pain and disease. Patients were evaluated with medical problems and discovered that biological interventions alone did not provide a complete picture of the patients' distress and care and that psychological, social, and cultural factors needed to be considered to reliably diagnose and treat pain[1]. A pioneering work on the role of behavioral conditioning and contextual variables in pain, as well as biopsychosocial concepts and the patient benefits of multidisciplinary pain treatment, contributed to an increasing acceptance of the biopsychosocial model of pain[2]. This model has a significant impact on the field of pain management, particularly in terms of stimulating the advancement of treatment and cost-effective interdisciplinary pain management services. The biopsychosocial model has been discovered to be the most heuristic approach to chronic pain perception[3]. The International Association for the Study of Pain (IASP) defines pain as 'an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage. Chronic musculoskeletal pain (CMP) is discomfort that lasts longer than three months and affects the bones, joints, and tissues of the body. Consequences of persistent pain are fear of movement, pain catastrophizing, anxiety, and nervous system sensitivity which appear to be the key contributors to pain and impairment[4]. Chronic pain affects about 43% of people with a pain condition. Fibromyalgia, arthritis, chronic lower back pain,

neuropathy, autoimmune diseases, headaches, and other ailments are examples of chronic pain conditions[5]. According to the Global Burden of Disease study, musculoskeletal disorders are one of the leading causes of disability. Physiotherapy care has typically focused on structural biomechanical issues; but, more recently, physiotherapist-led approaches have evolved that address the biopsychosocial aspects of a person's pain, including physical, psychological, social, and lifestyle concerns. The majority of current clinical practice guidelines advise treating musculoskeletal disorders from a biopsychosocial approach[6]. With the following review we intend to retrospect the literature in aspects of what exactly PNE is, How can we successfully implement it, what are the facilitators and barriers and what is physiotherapy perspective in the successful implementation of PNE.

Methodology

The databases were searched from 2013 to 2021 from Pubmed using terms ("Biopsychosocial model" or "musculoskeletal pain"), Google Scholar using terms("musculoskeletal conditions" or "PNE"), Web of Science using terms ("Physical therapy" or "Patient education"), Embase ("Biopsychosocial approach "or "chronic pain"). We searched for randomized controlled trials, reviews (narrative, literature, scoping), editorials, commentary. We reviewed titles and abstracts of 108 articles and chose those that met the inclusion criteria. A total of 86 articles were reviewed. Out of which 22 articles are cited in the following review. Our study includes researches that used BIOPSYCHOSOCIAL MODEL. The studies which focused on the use of BIOPSYCHSOCIAL MODEL in musculoskeletal pain management and also the studies which focused on the implementation of the biopsychosocial model in day-to-day life were included.

Implementation of Biopsychosocial Model

Functional improvement is based on a biopsychosocial model of medical care, which emphasizes not only the biology (injury/illness and related pathology) but also the individual as a whole person, including psychological and social characteristics. The goal of a program like functional restoration is to provide the patient with the skills, information, and behavioral improvements they need to reclaim their physical and mental health. This approach requires a multidisciplinary team that includes pain clinicians, physical and occupational therapists, psychologists, counselors, nurses, and case managers[7,5].

Biopsychosocial model-based rehabilitation includes pain coping skill training (PCST). Problem-focused and emotion-focused coping strategies are two types of coping techniques. Emotion-focused treatments entail regulating the emotional reactions to pain, and problem-focused solutions entail direct effort to deal with pain. PCST training includes components such as progressive muscle relaxation, mini practice, pleasant imagery, problem-solving, monitoring maintenance, negative automatic thoughts or coping thoughts, activity/rest cycling, and pleasant activity scheduling[8].

Biopsychosocial intervention includes explaining to patients about anatomy, biomechanics, and how cognition and behavior influence pain[9]. Various techniques can be implemented in the Biopsychosocial approach: Pain education, Cognitive behavioral therapy, mindfulness-based rehabilitation, cognitive restructuring techniques.

In pain education, knowledge regarding pain physiology and the contrast between acute and chronic pain is provided. Patients are reassured that despite their discomfort, they might better

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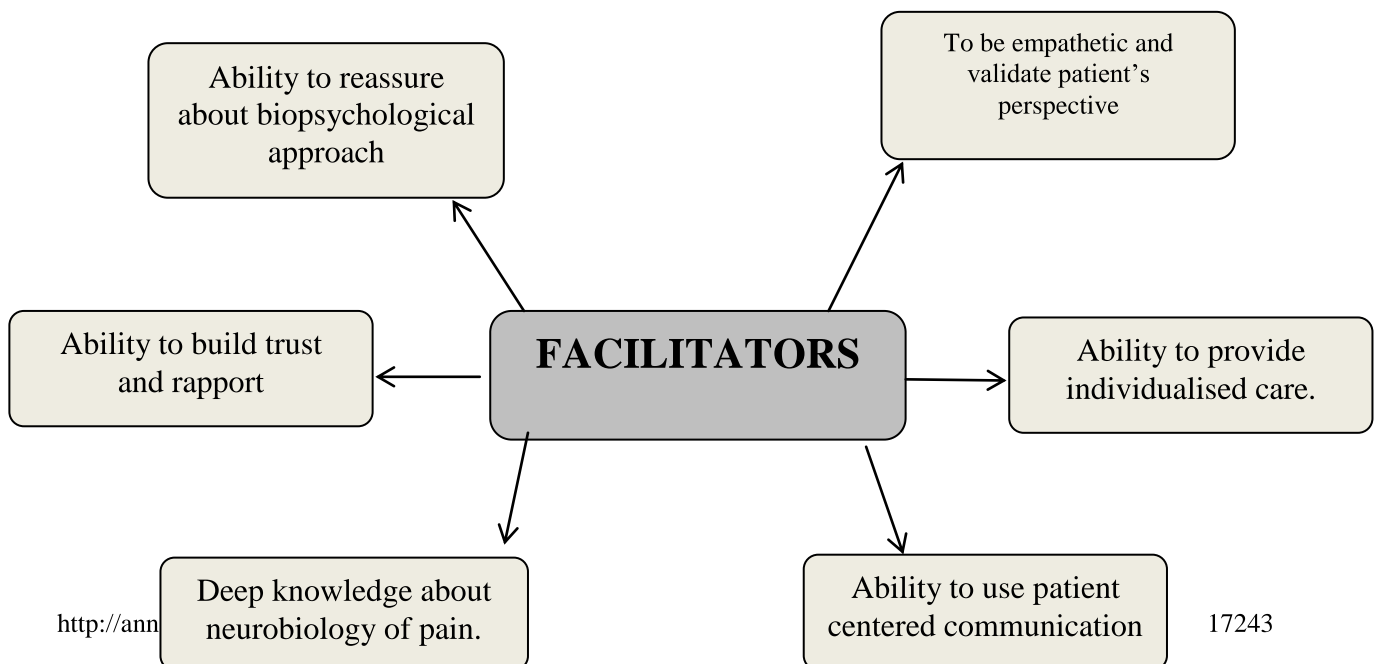
their everyday activities and that pain does not mean there is something harmful that has to happen in the body[10]. Cognitive-behavioural therapy and mindfulness-based stress reduction (MBSR) have shown to be effective in improving self-efficacy, one of the factors influencing the pain management interventions[2]. Cognitive restructuring techniques include training in Social skills, assertiveness, and problem-solving strategies. Using cognitive restructuring techniques, it is possible to change one's perceptions and cognitions. These techniques are intended to teach a person how to be more rational when dealing with problems and to change his or her perceptions and sensitivity[11].

Factors facilitating the implementation of Biopsychosocial Model

The ability to view pain as a part of a patient's overall health which can be aggravated by psychological and social stress. In the doctor-patient or therapeutic relationship, the ability to build trust and rapport, to be empathetic and validate the patient's perspective, and to manage conflicts and treatment goals[12]. The ability to communicate, inspire, and explain things to patients using patient-centered communication and lay medical vocabulary and terminology, as well as the ability to listen, offer reassurance and encourage or speak about the biopsychosocial approach to patient care[12]. Professionals know how to provide individualized care or personalized understanding of each patient[13]. The ability of healthcare professionals to be self-aware of their knowledge gaps, as well as the ability to distinguish informal judgments about patients from the clinical reasoning process, may allow them to self-reflect on work experience and evidence separately[14]. Healthcare practitioners' perceptions, such as believing in the drawbacks of the biomedical paradigm or that patients would not benefit unless psychosocial factors were addressed[14]. Endorsement and political backing for the application of clinical practice guidelines by professional organizations and compensable entities may be viewed as a kind of assurance and support for healthcare professionals[15].



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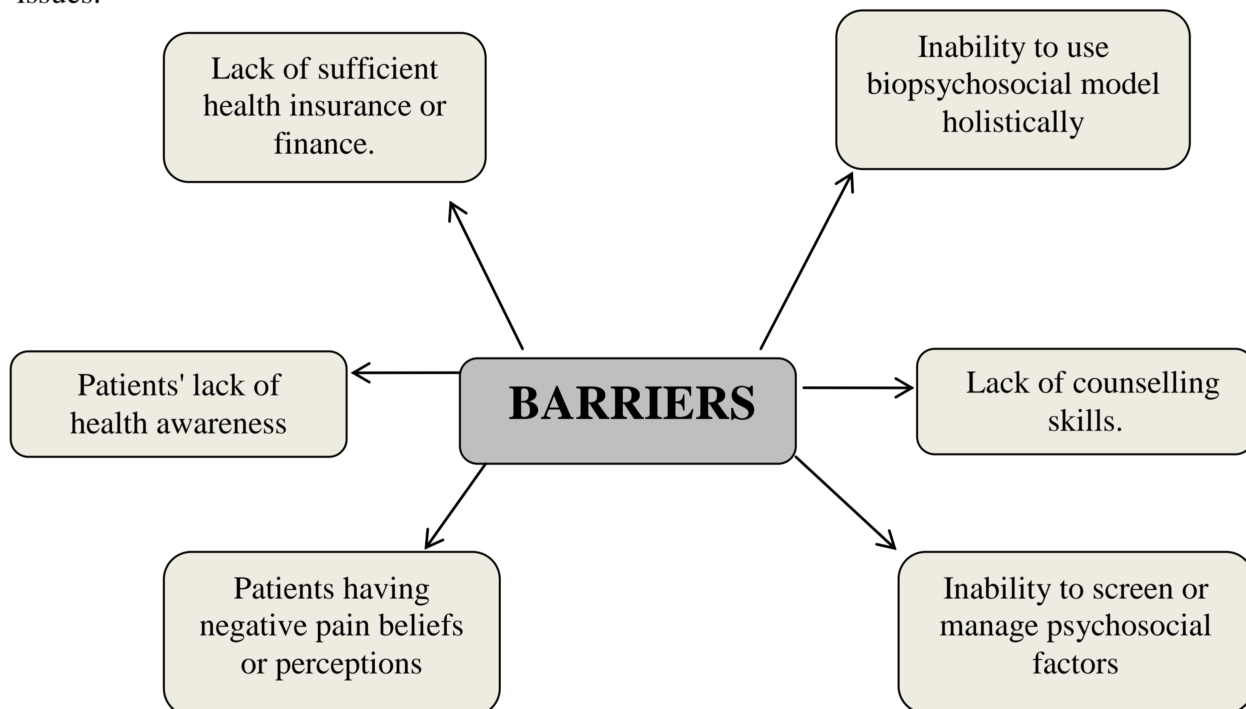
Factors inhibiting implementation of Biopsychosocial Model

Inability to use the biopsychosocial model holistically,Patients' lack of health awareness, encouragement, and unhelpful perceptions, such as the assumption that exercise was detrimental to pain, or unhelpful behaviors, such as a failure to consider psychological factors and the relationship between psychosocial factors, pain, and disability, were all obstacles.[16] Lack of experience to manage patients' biomedical concerns, beliefs and expectations, emotions, and reactions[17]. Lack of communication, interpersonal, and counseling skills to encourage and promote patient disclosure when coping with sensitive subjects, as well as to incorporate clinical explanations into a wider biopsychosocial context that made sense to patients.[17] They may not consider screening or managing psychosocial factors to be their responsibility or within their area of practice.[14] Explicit communication training in undergraduate or postgraduate training programs to teach how to handle patients' emotions, as well as assess and resolve patients' psychosocial concerns, was deemed deficient.[14] Patients lack sufficient health insurance or financial means to pay for services as well as lack of support from the government or associations to compensate health care practitioners for their training and effort in exploring psychosocial issues.[18]



Physiotherapy Perspective

The majority of current clinical practice recommendations support treating musculoskeletal disorders from a biopsychosocial standpoint. Physiotherapist-led therapies that target the biopsychosocial components of an individual's pain experience, including physical, psychological, social, and lifestyle factors, have recently evolved.[6] Physiotherapists aware of the benefits of biopsychosocial therapies, and some employ them in practice but, they face a lot of practical difficulties in their day to day clinical practice most of them lack the time required to deliver the counseling or PNE sessions, also a major barrier is pessimistic views of patients about such a treatment.[19] Patients have strong beliefs that such educational sessions are a waste of time and will not help to resolve their pain.[20,21] often patients are not comfortable sharing their emotional, psychological stressors with the therapist.[22] Physiotherapists are optimistic about delivering PNE to their patients but it seems the ambiguous nature of this treatment protocol is a barrier to its effective implementation. Hence the research focusing on how to exactly deliver the PNE, what kind of pain and patients are ideal for this treatment protocol., the ideal outcome parameters of this treatment is a must. This research must then be transformed from 'Bench to Bedside' and 'Bedside to Clinical Practice'.

Conclusion

All the above-reviewed articles concluded that BIOPSYCHOSOCIAL APPROACH should be implemented in treating musculoskeletal pain. PNE should be served as the base for the implementation of the biopsychosocial model. The biopsychosocial model should be included in an interdisciplinary treatment program. However, we are still in need of the literature which will precisely focus on the execution of PNE so that the physical therapy practitioners will have feasible treatment options which can be efficiently incorporated in day-to-day clinical practice which will help the chronic pain patients to deal positively with their pain.

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