

## Impact of Psychosocial Interventions on Clinical Outcomes Among Knee Pain Individuals with Psychosocial Impairments: A Systematic Review

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### ABSTRACT

People of all ages frequently complain about knee pain. It is caused by many conditions that occur in and around the knee complex. Psychosocial stress is a significant risk factor for knee pain, as it not only impacts mental and social well-being but can also lead to increased muscle tension and altered movement patterns, ultimately heightening the perception of pain. Psychosocial therapy helps individuals gradually address their fears and concerns. While commonly used for anxiety, it is especially effective in managing chronic pain by breaking the cycle of pain and fear-driven avoidance of activities, allowing individuals to regain confidence and improve their quality of life. This review is to find evidence of psychosocial interventions and exercises that impact individuals with knee pain. Systematic review studies were searched in electronic databases like PubMed, PEDro, Scopus, and COCHRANE Library. Studies that involved psychosocial therapy with exercises for subjects with knee pain were included. Compared to patients who just received the physiotherapy intervention, patients who also took part in the psychosocial intervention show noticeably larger decreases in depression, kinesiophobia, and pain catastrophizing. According to the review's findings, physiotherapists' psychological interventions i.e., psychosocial therapy along with exercise can significantly lower knee pain and disability. It may even improve the course of a patient's recovery.

**Keywords:** Depression, Kinesiophobia, Knee pain, Psychosocial factors, and Discomfort.

### 1. INTRODUCTION

People of all ages frequently complain about knee pain. There are many causes of knee pain. An injury like a torn cartilage or ligament may cause more knee discomfort. Nearly half of people aged 50 and older report knee pain, and 25% have persistent symptoms, making knee pain a common clinical issue (1). The term "psychosocial" describes a person's social and psychological aspects. It deals with how a person's ideas, emotions, and actions interact with the social settings in which they take place. It is becoming clearer that not all musculoskeletal discomfort can be explained by anatomical changes alone. Psychosocial factors can predict pain and disability in various musculoskeletal disorders, such as persistent neck, knee, and lower back pain (2)(3). Although several cross-sectional studies have found no link between knee discomfort and depression (4)(5), others have claimed that knee discomfort is linked to depressive symptoms (6)(7). It is proposed that weight-bearing pain and non-weight-bearing pain are two different aspects of knee discomfort (8). A more thorough understanding of the relationship between depression and task-specific knee pain would provide a comprehensive understanding of the depression-pain link, which may help clarify the mechanism by which depressive symptoms cause exacerbation of knee pain since the impact of knee pain on people's daily activities varies depending on the type of activity (9). Self-reported physical activity may overestimate physical activity compared to objectively assessed physical activity (11), although one study examined it as a covariate on the relationship between depression and performance-based physical function (10). As with many chronic diseases, people's perceptions of pain and impairment have historically been defined via a biological lens (12). According to this mechanistic, primarily biological paradigm, pain results directly from unpleasant stimuli triggering a specific brain pathway. This linear, biological model served as the foundation for developing treatment algorithms and disease prognostication. Nonetheless, it has been thoroughly shown that objective clinical and radiological measures do not match patient-reported pain and disability (13). Understanding the intricate relationship between psychosocial factors and knee discomfort is essential for treating knee diseases because these factors have an enormous effect on how pain is perceived, whether patients adhere to therapy, and how well they heal overall. This research aimed to conduct a comprehensive literature review to ascertain whether psychosocial intervention affects knee pain in cognitively impaired individuals.

## 2. METHODOLOGY

### *Study setting:*

A systematic review was conducted in the following defined format and the study was registered in the open science framework.

### *Identification of research question:*

The PICOT(S) method proposed by Sackett et al. (14) was used in this systematic review to formulate a search strategy.

P (Population)– people affected by knee pain.

I (Intervention)– psychosocial therapy with exercises.

C(Comparator)– any exercises/ no treatment

O(Outcomes)– Tampa scale of KINESIOPHOBIA, VAS.

T (Time)– all studies from January 2014 to May 2024.

S (Study design)– any study design

### *Identify the relevant studies:*

A comprehensive literature search was conducted using PubMed, PEDro, Scopus, and the Cochrane Database of Systematic Reviews. The Boolean search was applied as required. Keywords were “depression,” “kinesiophobia,” “knee pain,” “psychosocial factors,” and “discomfort”. Manual reference checks of the listed studies were also conducted to find more pertinent papers.

### *Study selection:*

Following database searches, Mendeley's desktop was used to check for duplicate citations in the gathered citations. Two reviewers independently checked all paper titles and abstracts in the first round. Full-text evaluation is the second step, and additional articles were separated to meet the study's goals. The unanimity and consistency of the studies that were part of the systematic review were finalized by a third expert reviewer who also cross-checked.

Data from the chosen research was gathered using a data extraction table, which included the authors' year, title, and highlights. The reviewers cross-checked the data entries to ensure accuracy. Lastly, an experienced reviewer examined the data table. The data extraction process was followed by a descriptive synthesis of the gathered articles. Overall, this must describe the evidence that is currently available and point out any gaps in the body of current literature.

The PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework was employed to systematically identify, screen, and include eligible studies. The process involved:

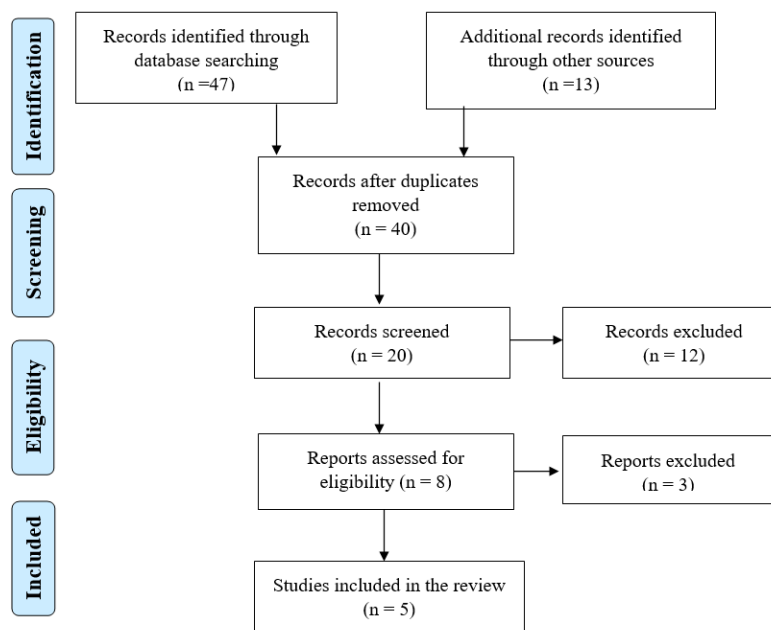


Fig.1.PRISMA flowchart of the study selection process

### 3. RESULTS

The characteristics of the included studies in this scoping review are shown in Fig. 1. Following study selection, 5 papers were included in the systematic review. The 5 most relevant studies are described in Table 1.

**Table 1. Description of the 5 studies in this systematic review**

AUTHOR	COUNTRY	YEAR	FINDINGS OF THE REVIEW
Phyomaung et al.	Australia	2014	There is substantial evidence linking depression to knee pain, which also revealed that psychological functioning plays a significant influence on knee pain. This review emphasizes the necessity of a biopsychosocial approach to knee pain, specifically addressing psychosocial issues like depression.
Maclachlan et al.	Brisbane	2017	According to this extensive review, people with PFP may have higher levels of anxiety, sadness, catastrophizing, and pain-related fear.
Briani et al.	Brazil	2018	The use of cognitive behavioral therapy, either in conjunction with or apart from exercise therapy, has been shown to improve psychosocial aspects such as psychological distress, depression, and self-efficacy.
Truong et al.	Canada	2020	Various psychological, social, and contextual factors influence all phases of healing after a severe sport-related knee injury.
Yijia et al.	Singapore	2024	A clear correlation has been shown between various psychosocial factors and clinical outcomes, and the effect of these factors on clinical outcomes for individuals with knee OA has been growing over time.

### 4. DISCUSSION

The findings of this systematic analysis highlight the significant influence that psychosocial therapies have on clinical outcomes for people with psychosocial deficits and knee pain. One important tactic for treating the psychological as well as the physiological aspects of persistent knee pain is the combination of psychosocial therapy with physical rehabilitation. Physical therapy and psychosocial methods must be integrated through a cooperative, multidisciplinary effort. A paradigm like this assures that treatment programs are comprehensive, treating the underlying causes of pain and impairment in addition to their symptoms. This all-encompassing strategy is essential for ending the vicious cycle of discomfort and inactivity that defines persistent knee disorders.

The results are consistent with the increasing amount of data that points to a biopsychosocial approach to treating musculoskeletal disorders. This strategy addresses the psychological obstacles to physical rehabilitation while also reducing

pain (15). Along with this in managing chronic pain, cognitive behavioral therapy has demonstrated steady effectiveness in lowering catastrophizing thoughts and encouraging constructive coping strategies. Research indicates that integrating cognitive behavioral therapy with physical therapy improves long-term results and adherence (16).

By promoting acceptance of chronic diseases, mindfulness-based therapies lower stress, anxiety, and pain perception. In older persons, where comorbidities frequently increase the psychological burden of knee pain, such therapies are especially beneficial (17). The review emphasizes the comprehensive advantages of psychological therapies, which go beyond just easing pain. Better social involvement, decreased absence from work, and improved everyday functioning are all results of improvements in psychological well-being. This is consistent with findings from recent research that highlight how self-management programs promote resilience and autonomy (17).

One important lesson learned is that physical therapy and psychosocial therapies work in concert. The dual strategy modifies maladaptive ideas and behaviors in addition to treating the actual symptoms of knee pain. Breaking the cycle of pain and inactivity that is frequently seen in chronic knee diseases requires this integration (18).

## 5. CONCLUSION

Combining psychological therapies with physical therapy has great promise for improving recovery and quality of life for those with knee pain. Although there is currently evidence that this combination technique has advantages, more extensive, high-caliber research is necessary to confirm these results.

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