

Exploring the Effectiveness of Aquatic Therapy on Pain Perception in Managing Patellofemoral Pain Syndrome: A Narrative Review

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ABSTRACT

Patellofemoral Pain Syndrome (PFPS) which is one of the most common overuse injury, is characterised by anterior knee pain, decreased functionality, and a lower quality of life. A number of factors, such as obesity, biomechanical misalignments, and excessive use influence it. Since aquatic-based therapies are low-impact and help with joint stress reduction while promoting strength, mobility, and functional benefits, they have become a potential intervention. Evaluating the effectiveness of aquatic therapy in treating PFPS and the extent to which focussed exercise therapies and aquatic therapy help patients with PFPS by reducing pain, improving motor function, and improving balance and examining the differences in results between conventional exercises and aquatic therapy. A literature search was conducted across multiple databases, including PubMed, Scopus, and Web of science, focussing on studies published between 2016 to 2024. Keywords such as "aquatic therapy", "PFPS", "pain" and "balance" were used to identify relevant articles. Inclusion criteria involved research on aquatic therapy for PFPS concentrated on quality of life, pain,

and balance. The studies included were randomised control trials and experimental studies within the past 10 years that have been published in English and data from selected studies were reviewed and synthesised to identify key findings. Aquatic therapy greatly increased motor function, decreased discomfort, and improved balance. Dynamic balance and knee strength were enhanced by intense aquatic training. On measures including the Visual Analogue Scale (VAS) and Anterior Knee Pain Scale (AKPS), aquatic therapy shown better results in lowering pain and improving functional scores than Vastus Medialis Oblique (VMO) strengthening. The range of motion, pain, functional capacities, and quality of life were all significantly enhanced by aquatic exercises. PFPS can be effectively managed by aquatic therapy, which has been shown to be beneficial for middle-aged people, obese women, and athletes. It continuously improves motor function, functional recovery, pain reduction, and quality of life than conventional exercises.

Keywords: Anterior knee pain scale, Quality of life, Visual Analogue Scale (VAS).