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Does Clinical Pilates constitute a reliable rehabilitation method in "Rotator Cuff Related Shoulder Pain" (RCRSP)?

Georgios Kypraios1, Dr Dimitrios Stasinopoulos2
1. Physiotherapist PT, MSc PhD Candidate Dept. of Physiotherapy, Faculty of Health and Caring Sciences, University of West Attica 2. Assistant Professor, Physiotherapy Dept. of Physiotherapy, Faculty of Health and Caring Sciences, University of West Attica

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The shoulder region constitutes one of the most complex joints of the human body suffering from a variety of pathologies mostly in its tendon elements [1]. In naming this phenomenon the dominant term is "Rotator Cuff Related Shoulder Pain" (RCRSP), which constitutes "umbrella definition" that includes a plethora of pathologies such as impingement syndrome (painful subacromial syndrome), rotator cuff tendonitis and tendosynovitis and tendon ruptures, all accompanied with tendon stiffness, oedema development, pain and increase in tendon frailty. [2-4]. Many interventions have been used in the treatment process, both chemical (anti-inflammatory drugs, cortisone, hyaluronic acid, Platelet Rich Plasma, PRP) [05, 06] and surgical (acromioplasty) [10], and also physical therapy [07-13].

Physiotherapy is a reliable and effective treatment method of RCRSP [11], involving two major categories. Firstly, electrophysical agents such as TENS electrotherapy, therapeutic ultrasound, shockwave treatment, Laser, electromagnetic field therapy [07-09], with good short-term results mostly in regards of "combating" pain, oedema and inflammation. On the other hand, therapeutic exercise, both in site or at home demonstrates much better results in pain management, mobility (Range of Motion, ROM increase), muscle strength and stamina, in the long-term (over one year period) [11-13]. That includes a variety of exercises (stretching, range of motion exercises, strengthening exercises) and also manual therapy and soft tissue techniques [13, 17]. As for Clinical Pilates there seems to be a lack of research papers which constitutes a research gap that the undermentioned PhD thesis aims to cover.

Clinical Pilates is a series of exercises that are "tailor-made" to the abilities and intricacies pf each body individually [14]. The method has been used with great success in numerous musculoskeletal and neurological disorders such as low back pain, fibromyalgia, multiple sclerosis [15, 16]. Unfortunately concerning tendinopathies of the shoulder research data are extremely poor. Revieing the current literature only a single study in 2017 from

Atilgan et al. can be found. This study shows positive results on a 33-patient sample that demonstrate continuous (over 4 weeks) shoulder pain [17].

The above findings demonstrate the need for further research as far as the RCRSP rehabilitation is concerned. Although therapeutic exercise seems to outweigh other forms of "conventional" physiotherapy means such as electrotherapy or shockwave treatment [8, 12, 13], the specific parameters of the protocol, are still a field of debate amongst researchers [18-20]. Parameters like the kind of exercise (concentric, eccentric passive or resistance exercises), frequency (times per week) number of sets and repetitions, (high volume/low volume), solo or team exercise usage of specialized forms of exercise like clinical Pilates [17-20]. This is where the aforementioned PhD thesis titled "The effects of Clinical Pilates versus exercise on shoulder tendinopathies". Author`s main goal is through the aforementioned dissertation, the researchers to be able to extrapolate useful data as for the benefit of Clinical Pilates in pain management, increase of mobility and muscle strength and ultimately the implementation of the method on therapeutic exercise protocols in order for a complete physiotherapeutic rehabilitation protocol concerning shoulder tendinopathies to be designed.

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