International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

Virtual Versus in-Person Physiotherapy Consultations Following Shoulder Pain

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ABSTRACT:

Examining and contrasting the effectiveness of online and in-person physical therapy consultations for patients with a focus on shoulder discomfort is the study's goal. The study focuses on the comparison between the patients having in-person physiotherapy consultations and virtual physiotherapy consultations. The methodology used in the study is based on review of literature including research papers, research articles, and published reports and the data relevant to virtual and in-person physiotherapy related to shoulder pain. It has been discovered that both in-person and virtual physical therapy consultations significantly reduced pain and significantly improved shoulder function. When the two consultation modalities were examined independently, there were noticeable gains in shoulder function and pain ratings.

KEYWORDS: Shoulder discomfort, Physiotherapy, In-person appointments, and Virtual consultations.

INTRODUCTION :

Estimates indicate that shoulder, knee, and low back pain are the three most common musculoskeletal presentations. The cost of shoulder pain to society is likewise high (Ager et al., 2020; Santello et al., 2020)[1]. Although each patient's prognosis for shoulder soreness is different, it is anticipated that 50% of patients will still experience symptoms after six months (Hodgetts et al., 2021)[2].The incapacity to perform tasks owing to shoulder pain might affect social, occupational, recreational, and athletic activities (Chetty, 2011)[3]. Furthermore, shoulder discomfort may be associated with psychological distress and a worse quality of life, according to Ackerman et al. (2022)[4].

The main objectives of physiotherapy treatments for shoulder discomfort are pain relief and improved function. Physical therapy has typically been given in-person since patient perceptions of the therapist and treatment, together with communication and interpersonal skills, are the most important factors for treatment efficacy and satisfaction (Chetty, 2022)[5]. During the COVID-19 pandemic, safety precautions and social distancing protocols necessitated virtual physiotherapy appointments. Virtual consultations offer a number of benefits over in-person consultations, such as reduced patient travel costs, less exposure to hospital surroundings, and simpler access to care for remote populations (Kilvert et al., 2020)[6]. It is crucial for physiotherapy services to understand, from a local perspective, if virtual consultations can effectively provide therapies.

REVIEW OF LITERATURE

Physiotherapy

Since 460 BC, notable medical professionals like Hippocrates and Galen have practiced physiotherapy, making it one of the earliest medical specialties. Beginning in the eighteenth century, physiotherapy rapidly advanced and became more modernized due to events such as the First World War, the Polio pandemic, and the increase in impairments[7]. As a result of years of persistent work, research, and technique development, it has been acknowledged and valued for its evidence-based approach. It is difficult to sum up physical therapy and the work of a physiotherapist in a few words because the field takes a comprehensive approach to answering these questions. According to the World Confederation of Physical Therapy, physical therapy focuses on recognizing and optimizing quality of life and movement potential in the areas of promotion, prevention, treatment/intervention, habilitation, and rehabilitation. This covers one's physical, mental, emotional, and social well-being. In physical therapy interactions, the physical therapist evaluates the patient's potential for mobility and sets goals using knowledge unique to physical therapy. The patient/client, families, other medical professionals, and communities are all involved[8]. Due to a poliomyelitis outbreak in Mumbai in 1952, physiotherapy was first introduced in India. The first physiotherapy school and center in the country was established in 1953 at Seth G.S. Medical College and K.E.M Hospital by the Government of India, the Mumbai Municipal Corporation (BMC), and the World Health Organization (WHO)[9]. Over seven decades have passed since

the beginning of physiotherapy in India, mostly in Mumbai. The general population and other healthcare professionals, including doctors, are still largely unaware of physiotherapy in India, despite recent advancements and excellent results in the provision of high-quality treatment.
Finding out that they lack sufficient expertise is shocking, as they are frequently the first to be referred for therapy. Therefore, a survey of medical and non-medical workers is required to find out about awareness, system dysfunctions that physiotherapists address, and the role that physiotherapy plays in lifestyle diseases. It is thought that greater delivery and optimization of physiotherapy services—which now seem to be underutilized—come from early referral, recognition, and awareness among the public and medical practitioners[10].

Therapies for Shoulder Pain

Of all the illnesses of the peripheral joints, shoulder problems are the most prevalent[11]. Neer used the phrase "Shoulder Impingement Syndrome (SIS)" for the first time in 1972. The illness known as shoulder impediment syndrome progresses gradually. It describes the signs and symptoms brought on by compression of the rotator cuff tendons and the subacromial bursa between the greater tubercle of the humeral head and the anterolateral edge of the acromion process[12]. Abnormal mobility of the scapula during arm elevation has been linked to shoulder deficits like SIS[13]. Furthermore, shear stress or damage to the distal portion of the supraspinatus tendon could result in impulsive or shear stress, which could cause progressive alterations linked to shoulder impingement syndrome[14]. Impingement syndrome may also be exacerbated by weakness of the posterior scapular stabilizers, as this alters the mechanics of the glenohumeral joint. Activities like throwing, sleeping, raising the shoulders, and working are the ones where SIS has the worst harmful effects[15]. Elevated shoulder postures, which are widespread in many occupational activities, activities of daily living, and sports, can cause pain and dysfunction. In the end, these constraints result in a decline in one's quality of life and functional independence[16]. Weakness in the scapulothoracic muscles, such as the serratus anterior, rhomboids, and the middle and lower trapezius, is linked to the pain and disability seen in shoulder impingement syndrome (SIS). This muscle weakness can lead to improper scapular positioning, disruptions in the scapulohumeral rhythm, and overall shoulder dysfunction[17]. It takes a well-coordinated synergistic co-contraction of rotator cuff muscles and scapular stabilizers to anchor the scapula, guide movement, and maintain scapula-humeral rhythm. During this action, the concave anterior surface of the scapula moves, sliding on the convex poster lateral surface of the thoracic cage. Studies using cross-sectional data have shown that when muscles are weak or weary, the scapula humeral rhythm is disturbed and shoulder pain results[18]. By creating microtrauma to the shoulder muscles, capsule, and ligamentous tissue, this dysfunction may lead to impingement[19]. Exercises for scapular stability have been shown in biomechanical research to enhance the scapula's external, upward, and posterior tilting. The scapula's appropriate biomechanics and the surrounding musculature are essential to the shoulder's overall normal function. The obvious treatment for shoulder impingement syndrome is strengthening the rotator cuff muscles. However, since the scapula is where the rotator cuff muscle originates, strengthening the muscles that regulate the scapula's position should also be a part of a rehabilitation exercise regimen. A change in the biomechanics of the glenohumeral joint due to weakness in these muscles may result in an excessive amount of stress being placed on the rotator cuff and anterior capsule[20]. Therefore, the main goal of this research is to ascertain if scapular stability exercises can effectively reduce discomfort and enhance physical function in patients suffering from shoulder impingement syndrome.

Virtual Physiotherapy

The COVID-19 pandemic, which began in early 2020, has had a significant impact on healthcare. Most nations in the world imposed stringent lockdowns to halt the spread of COVID-19[21]. When in-person physiotherapy sessions abruptly ended, physiotherapists had to find innovative ways to treat patients virtually[22]. Patients in need of rehabilitation were kept away from clinics and hospitals due to travel restrictions and contamination fears[23]. Thus, telerehabilitation soon became a necessity.
The provision of physical therapy services via audio and video conferencing technology allows patients to receive treatment in the convenience of their own homes. This is known as virtual physiotherapy. In the absence of it, patients could have to discontinue their physical treatment, which could result in subpar motor outcomes and a reduction in their quality of life[24]. The study and implementation of telehealth have seen a notable upsurge in the last several years[25]. Telehealth has been included in the delivery of healthcare by numerous health specialties. These fields include pediatrics, cardiology, ophthalmology, radiography, nursing, rehabilitation, physiotherapy, and pharmacy[26]. Tele-rehabilitation, as defined by the American Telemedicine Association (2010), is the delivery of rehabilitation services to adults and children via information and communication technologies by a broad spectrum of professionals, such as educators, psychologists, dieticians, audiologists, physical therapists, occupational therapists, speech-language pathologists, nurses, rehabilitation engineers, and assistive technologists, among others[27]. The advarandomized;elehealth therapies in several physiotherapy subspecialties have been demonstrated by high caliber randomized, controlled trials that have been published recently. The creation of telemonitoring technologies to enable patients to get autonomous rehabilitation in the comfort of their own homes is known as tele-physiotherapy[28]. Patients can conveniently skip travel and take care of some of the more basic medical tasks on their own with the help of telemonitoring. The aim of tele-physiotherapy is to facilitate in-person sessions between patients and medical professionals by using telecommunication networks. Applications of tele-physiotherapy for several medical disorders have already been published[29]. The objectives of treatment determine the various forms that tele-physiotherapy can take. Physiotherapists and patients can communicate directly using videoconferencing, either one-on-one or in a virtual group environment. The use of telehealth to provide physiotherapy remotely has increased while the importance of "hands on" physiotherapy treatments has decreased for some medical disorders. For instance, exercise therapy is a crucial part of the care for low back pain, but electrotherapy is no longer advised for normal treatment. In a brief review study, Pahwa P et al. (2018) addressed the role of tele-physiotherapy for kids with cerebral palsy in classroom settings and found that it's an effective therapeutic strategy for these kids' motor skill development[30]. Van Egmond M et al. (2018) did a Systemic Review and meta-analysis study to investigate the quality of life and postoperative functional outcomes of surgical patients. The results of the study showed that tele-rehabilitation in conjunction with physiotherapy is possible and has the potential to improve quality of life, however it is not as effective as standard treatment for surgery patients[31]. The impact of a 6-week tele-physiotherapy program on patients with knee osteoarthritis' quality of life (QoL) was examined by Odole A. et al. (2014). After randomly and equitably allocating fifty patients with knee OA to the clinic group (CG) and

the tele-physiotherapy group (TG), it was determined that tele-physiotherapy via telephone enhanced patients' quality of life in a manner like that of clinic-based treatment[32]. Despite the potential for tele physiotherapy to enhance health outcomes and increase the capabilities of the healthcare system, there aren't many publications that show physiotherapists using it frequently. Thus, the purpose of the study was to determine the kinds of treatments that are given via virtual physiotherapy and whether or not the physiotherapist employs tele-physiotherapy as a therapeutic technique.

Treatment Provided In-Person Physiotherapy

1. Pain Management Techniques:

- Virtual physiotherapy can teach pain management strategies such as relaxation techniques, mindfulness, and breathing exercises to help alleviate discomfort.
- Guided imagery and visualization exercises may also be utilized to distract from pain and promote relaxation.

2. Functional Movement Training:

- Physiotherapists can assess functional movements such as walking, squatting, or lifting through video calls.
- Based on the assessment, they provide guidance on improving movement patterns, strength, and coordination through targeted exercises and movement drills.

3. Activity Modification:

- Virtual physiotherapy involves assessing daily activities and making modifications to reduce strain and prevent injury exacerbation.
- This may include ergonomic adjustments for workstations, advice on proper lifting techniques, and guidance on modifying recreational activities to prevent pain flare-ups.

4. Cognitive Behavioral Therapy (CBT):

- Some virtual physiotherapy sessions incorporate aspects of CBT to address the psychological aspects of pain and disability.
- Therapists help patients identify unhelpful thoughts and behaviors related to their condition and develop coping strategies to manage pain, anxiety, and depression.

5. Home Exercise Program Progression:

- Physiotherapists design home exercise programs tailored to the patient's abilities and goals.
- Over time, these programs are adjusted and progressed based on the patient's improvement and feedback, ensuring continued challenge and adaptation.

6. Tele-Rehabilitation:

- In cases where patients require ongoing rehabilitation following surgery or injury, virtual physiotherapy can provide continuity of care.
- Therapists guide patients through post-operative exercises, monitor wound healing, and provide support and encouragement remotely.

7. Nutritional Counseling:

- While not traditionally associated with physiotherapy, some virtual practices offer nutritional counseling to support overall health and recovery.
- Dietitians or physiotherapists with nutritional training can provide guidance on dietary modifications to reduce inflammation, support tissue repair, and optimize energy levels.

Preference

Promising findings from studies on the efficacy of virtual physiotherapy suggest that for many patients, it can be just as successful as receiving treatment in person. Ascenti conducted a large-scale study involving data from over 27,000 patients and discovered that digital physiotherapy is a good substitute, particularly for less complicated musculoskeletal disorders. According to the study, patients who used the app to watch workout videos significantly improved in all severity categories[33].

The ability to receive treatment conveniently from home can improve adherence to rehabilitation programs. Another benefit of virtual physiotherapy is

the use of digital tools, such as progress trackers and demonstration videos, which encourage patient engagement. Additionally, physiotherapists can gain a deeper understanding of a patient's home setting through virtual visits, which can help create more individualized therapy regimens.

Research Gap

Studies on the effectiveness of virtual physiotherapy have produced encouraging results, indicating that for many patients, it can be just as successful as obtaining in-person care. Ascenti found that digital physiotherapy is a good alternative, especially for less complex musculoskeletal problems, after conducting a large-scale study with data from over 27,000 patients. In all severity categories, patients who watched workout videos on the app showed considerable improvement, according to the study.

Adherence to rehabilitation programs can be enhanced by the convenience of receiving therapy from home. The use of digital tools that promote patient participation, including progress trackers and demonstration videos, is another advantage of virtual physiotherapy.

Conclusion

The study demonstrates that both virtual and in-person physiotherapy consultations can significantly improve shoulder function and pain scores. Virtual physiotherapy offers notable benefits, such as convenience, reduced travel costs, and accessibility for isolated populations, making it a viable alternative to traditional methods. However, further research is needed to address gaps, particularly in long-term outcomes and condition-specific protocols. Enhancing patient engagement through digital tools and ensuring comprehensive training for practitioners will be crucial for optimizing virtual physiotherapy. The integration of virtual consultations into standard practice holds promise for expanding the reach and effectiveness of physiotherapy services.

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