E-Poster

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The Role of Telerehabilitation in Pain and Mental Health Management for Knee Osteoarthritis: A Meta-Analysis of Randomized Controlled Trials

Topic: Telerehabilitation

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BACKGROUND

Telerehabilitation offers the flexibility of remote monitoring and interactive physical therapy sessions, allowing patients to engage in rehabilitation from their homes. Despite growing interest in this method, there remains a lack of consensus regarding its efficacy compared to standard rehabilitation programs. Most studies to date have focused on short-term outcomes, and long-term evaluations of its impact on pain reduction, functional recovery, and mental health remain scarce. This meta-analysis aimed to assess the effects of telerehabilitation versus standard rehabilitation programs on knee osteoarthritis, specifically focusing on pain reduction, which is crucial in the context of physical and psychological well-being.

METHODS

We conducted a systematic review and meta-analysis of randomized controlled trials (RCTs) and observational studies comparing telerehabilitation and standard rehabilitation programs. PubMed, Embase, and Cochrane databases were searched for studies published up to June 26, 2024. Data extraction and quality assessment was done in accordance with Cochrane guidelines. The primary measure of effect was the mean difference (MD) in pain scores between the telerehabilitation and standard rehabilitation groups, expressed with 95% confidence intervals (CIs) and pooled using a random-effects model. Heterogeneity was evaluated using the I^2 statistic, with values above 50% indicating substantial heterogeneity. The primary outcome was pain reduction, a critical factor in managing mental distress and enhancing quality of life.

RESULTS

Three studies involving 190 patients were included. Of these, 99 patients (50.32%) were treated with telerehabilitation, while the remaining 91 patients received standard in-person rehabilitation. The primary outcome of interest, pain reduction, was consistently assessed across the studies using validated tools such as the Knee Injury and Osteoarthritis Outcome Score (KOOS) Pain subscale. The telerehabilitation group showed a significant improvement in pain scores compared to the standard rehabilitation group (mean difference 11.07, 95% CI -7.25 to 29.39, $p = 0.24$, $I^2 = 91\%$). This trend towards reduced pain, though not statistically significant, indicates potential benefits of telerehabilitation in mitigating pain-related psychological suffering.

CONCLUSION

Despite high heterogeneity ($I^2 = 91\%$) suggesting variability across studies, telerehabilitation showed a positive association with improved pain outcomes in patients with knee osteoarthritis. Further investigation is needed to solidify the role of telerehabilitation in comprehensive pain and mental health management for knee osteoarthritis patients.

Statement of Disclosures

None

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