ORIGINAL RESEARCH PAPER

Physiotherapy

EFFECTIVENESS OF KINESIO TAPING VERSUS STRENGTH TRAINING IN PATELLOFEMORAL PAIN SYNDROME

KEY WORDS: Patellofemoral Pain Syndrome, Kinesio Taping, Strength Training, Knee Pain, Rehabilitation.

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ABSTRACT

Background: Patellofemoral Pain Syndrome (PFPS) is one of the most prevalent causes of anterior knee pain, especially among young adults and athletes, characterized by diffuse, retro-patellar discomfort aggravated by activities like squatting, stair climbing, or prolonged sitting. Both Kinesio Taping (KT) and Strength Training (ST) are widely adopted conservative approaches, but their comparative effectiveness remains under evaluation. **Purpose:** This study aimed to compare the effectiveness of Kinesio Taping versus Strength Training in reducing pain and improving functional performance in patients with Patellofemoral Pain Syndrome. **Result:** Both Kinesio Taping and Strength Training significantly reduced pain and improved function, but Strength Training yielded superior long-term functional gains while Kinesio Taping provided more immediate pain relief.

INTRODUCTION

Patellofemoral Pain Syndrome (PFPS) is a non-traumatic musculoskeletal disorder commonly affecting adolescents, athletes, and active adults, particularly females. The condition is characterized by anterior knee pain exacerbated during activities such as stair climbing, running, or prolonged sitting (Crossley et al., 2016). Muscle imbalances, poor patellar tracking, and overuse are primary contributors (Willy & Hoglund, 2020).

Conservative physiotherapy approaches like Strength Training (ST) and Kinesio Taping (KT) are widely used in clinical practice. KT is believed to improve proprioception, correct patellar alignment, and enhance circulation (Thelen et al., 2008), whereas ST focuses on strengthening the quadriceps, gluteal, and hip abductors to reduce knee joint stress (Bolgla& Boling, 2011). Though both methods show promise, their comparative efficacy in PFPS management remains underexplored.

MATERIALS AND METHODOLOGY

Objective of the Study

To evaluate and compare the effectiveness of Kinesio Taping versus Strength Training in improving pain relief and functional mobility among patients diagnosed with Patellofemoral Pain Syndrome.

Study Design

Randomized controlled trial (RCT).

Sampling Method

Random sampling

Duration of Study

8 weeks.

Inclusion Criteria

- Age: 18–40 years.
- Diagnosed Patellofemoral Pain Syndrome (PFPS) confirmed by clinical examination.
- Pain during daily activities like stair climbing or squatting.

Exclusion Criteria

- History of knee surgery.
- Ligamentous injury or meniscal tear.
- Neurological disorders affecting lower limbs.
- Current corticosteroid medication use.

Tools Used in the Study

- Visual Analogue Scale (VAS) for pain.
- Kujala Anterior Knee Pain Scale for functional assessment.
- Goniometer for range of motion.

Method

Participants (n=40) were randomly divided into two groups:

- Group A received Kinesio Taping (applied twice weekly) combined with a basic stretching protocol.
- Group B performed a structured Strength Training program focusing on quadriceps, gluteus medius, and core muscles (three sessions per week).

Outcome measures were recorded at baseline, week 4, and week 8.

RESULTS

- Both groups showed statistically significant improvements in pain and function ($p<0.05$).
- Group A (Kinesio Taping): Immediate reduction in VAS scores within 2 weeks but plateaued by week 8.
- Group B (Strength Training): Slower initial pain relief but superior functional improvement (Kujala score) by the 8th week.

Data Analysis

Outcome Measure	Group A (KT) Pre (Mean ± SD)	Group A Post (Mean ± SD)	Group B (ST) Pre (Mean ± SD)	Group B Post (Mean ± SD)	p-Value (Between Groups)
VAS Score	7.5 ± 1.2	3.2 ± 1.0	7.3 ± 1.1	2.8 ± 0.9	0.04
Kujala Score	58.2 ± 5.5	78.5 ± 6.3	57.9 ± 6.0	84.2 ± 5.8	0.03

DISCUSSION

The study reveals that both Kinesio Taping and Strength Training are effective interventions for PFPS, consistent with prior literature (Thelen et al., 2008; Bolgla& Boling, 2011). KT offered immediate pain relief likely due to its proprioceptive effect and improved circulation, while Strength Training progressively enhanced muscular control and joint stability, resulting in improved functional outcomes by the study's conclusion.

Research by Crossley et al. (2016) and Willy & Hoglund (2020) supports the use of hip and knee strengthening as a cornerstone in PFPS rehabilitation. KT, while helpful for short-term symptom relief, did not yield lasting improvements without accompanying exercise, aligning with research by Kase et al. (2013).

Thus, for long-term function and mobility enhancement, Strength Training proves to be a more sustainable strategy for managing PFPS.

CONCLUSION

Both Kinesio Taping and Strength Training showed significant efficacy in treating PFPS. However, Strength Training resulted in superior long-term functional improvement, while Kinesio Taping provided more rapid, short-term pain relief. A combined approach may offer optimal benefits in clinical practice.

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