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Effect of Inhibitory Kinesio Taping Technique on Pain and Functional Disability in Patients with Knee Osteoarthritis: A Comparative Study

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ABSTRACT:

Tittle: Effect of Inhibitory Kinesio Taping Technique on pain and functional disability in Patients with Knee Osteoarthritis.

Background: Knee Osteoarthritis is a common condition which represents a major contribution to burden of physical disability. Prevalence increases with age and affects 33% of individuals over the age of 65 years.

Objective: To study effect of inhibitory kinesio taping technique on Pain using visual analogue Scale and Functional disability using knee injury and osteoarthritis outcome score among patients with knee osteoarthritis.

Subjects and Method: 76 participants were recruited according to selection criteria and were randomly allocated to inhibitory kinesiotaping for group A (n=38) and conventional group B (n=38). Both group underwent quadriceps strength training for 60 minutes, 3 times per week for 4weeks along with stationary bicycle for 10 mins and illiotibial Band stretching.

Result: After training both groups showed extremely significant ($p < 0.0001$) improvement in terms of Visual analogue scale and Knee injury and osteoarthritis scale . On comparison between two groups, it was observed that there was no statistically significant difference between two groups in terms of Visual analogue scale and there was extremely significant difference between groups in terms of Knee injury and osteoarthritis scale.

Conclusion: study concludes that inhibitory kinesiotaping technique is significant and effective in patients with knee osteoarthritis.

Keywords: Inhibitory kinesio taping, knee osteoarthritis , visual analogue scale , knee injury and osteoarthiritis outcome score.

INTRODUCTION

Osteoarthritis (OA) is a chronic degenerative disorder of multifactorial etiology characterized by the loss of articular cartilage, hypertrophy of bone at the margins, subchondral sclerosis, and range of biochemical and morphological alterations of the synovial membrane and joint capsule.[1] OA of the knee is the most common cause of chronic disability among older persons.[2]

OA is the second most common rheumatologic problem and the most common joint disease with a prevalence of 22% to 39% in India. OA is more common in women than men, but the prevalence increases

dramatically with age. Nearly, 45% of women over the age of 65 years have symptoms. OA of the knee is a major cause of mobility impairment, particularly among females. It was estimated to be the 10th leading cause of nonfatal burden.[1]
Kinesiotaping (KT) has become a popular adjunct technique to inhibit or reduce musculoskeletal injuries. It was first introduced by Kase and colleagues in 1996 (Kase et al., 2003). KT is designed to mimic natural human skin characteristics such as stretchability, elasticity and thickness.[3]

AIM: To study the effect of Inhibitory kinesio taping techniques on pain and functional disability in patients with knee osteoarthritis

OBJECTIVES: To find out the effect of inhibitory kinesotaping technique on pain in patients with knee osteoarthritis.
To find out the effect of inhibitory kinesotaping technique on disability in patients with knee osteoarthritis

METHODOLOGY:
- **Study design : randomized control**
- **Study type : Experimental study**
- **Study duration : 2 years**
- **Sample Size : 76**
- **Sampling method : convenient**

Inclusion criteria	Exclusion criteria
Male/female patients between the age group of 50-75 yrs.	Patients with knee OA surgery, recent trauma to knee.
Patients with complain of knee pain, stiffness, difficulty climbing stairs, in walking and sitting crossed leg.	Patients who had mental, neurological, cardiac, vascular and sensory problems.
Patient complains of knee pain from 6 months	
Participants willing to participate.	
Patients diagnosed with OA on the basis of radiological findings, grade 2 and 3	

Study setup : Orthopaedic Physiotherapy Department- Dr. A.P.J.AK COPT Loni

PROTOCOL

EXERCISES	REPETITIONS	FREQUENCY
GROUP A: Stationary bicycle Iliotibial stretching Knee extension exs with load Inhitory kinesiotaping	10 mins 15reps x 3 sets	30 mins sessions 4 sessions per week For 4 weeks
GROUP B: Stationary bicycle Iliotibial stretching Knee extension exs with load	10 mins 15reps x 3 sets	

Inhibitory kinesio taping on hamstring muscle

OUTCOME MEASURES

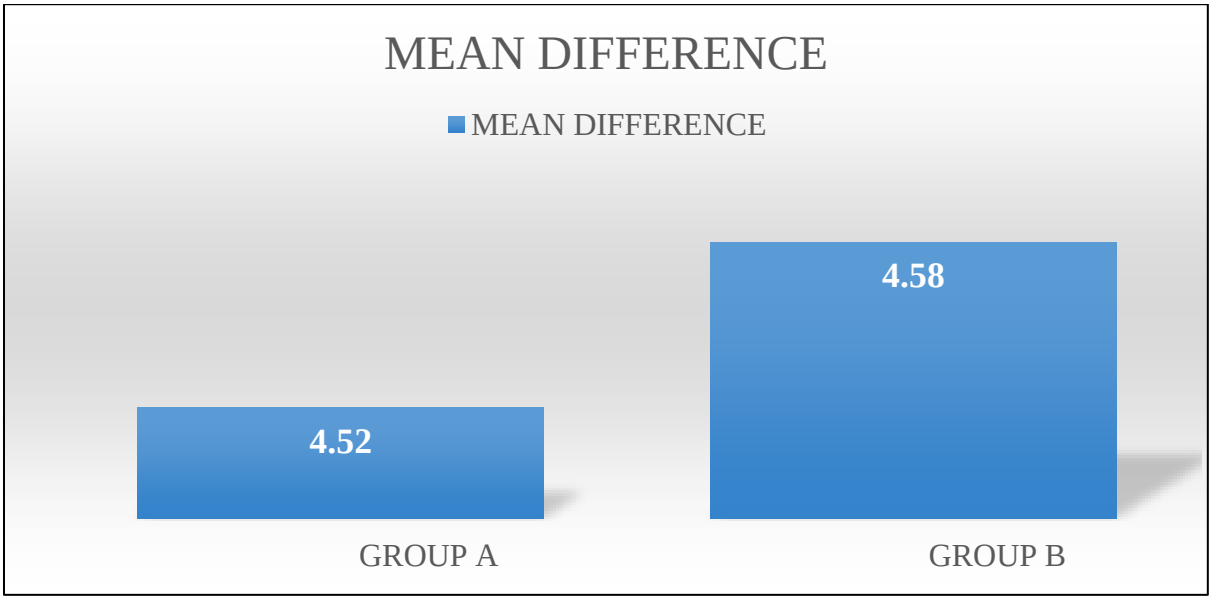
1. VAS

2. KOOS Scale

RESULT:

Table no. 1 – shows mean difference of VAS score between group A and B :

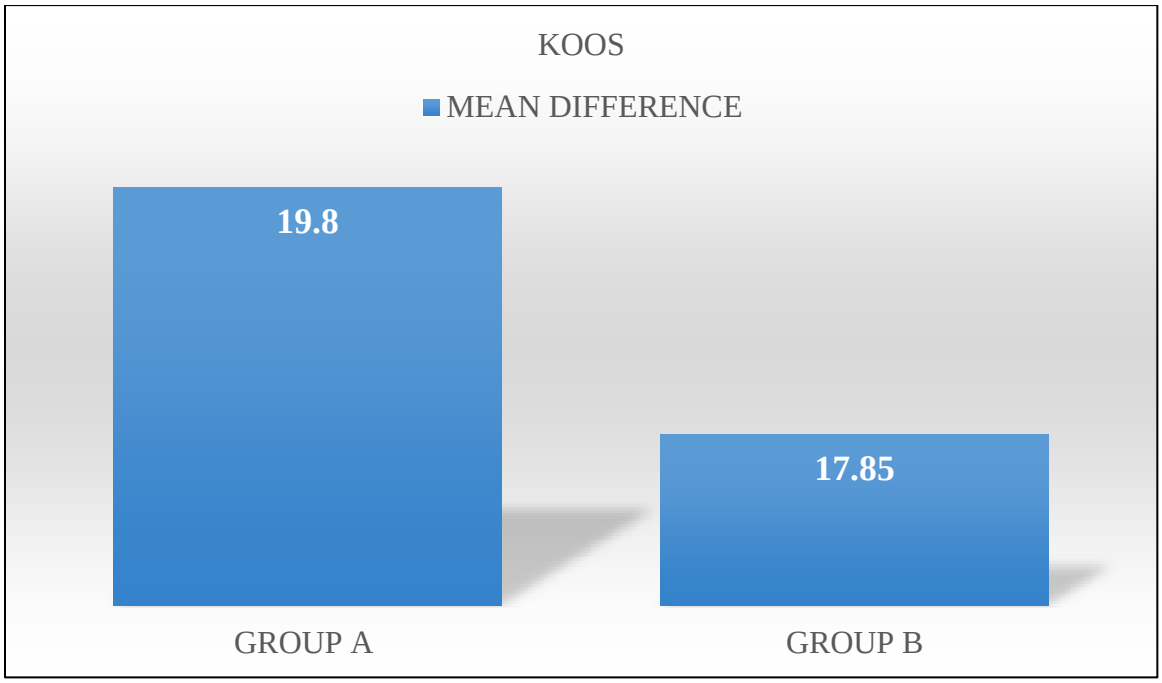
VAS	MEAN DIFFERENCE
GROUP A	4.52
GROUP B	4.58



Interpretation:- On comparison between groups it was observed that the difference between the groups was extremely significant (p -< 0.0001).

Table no. 2– shows mean difference of KOOS score between group A and B :

KOOS	MEAN DIFFERENCE
GROUP A	19.8
GROUP B	17.85



Interpretation: On comparison between groups it was observed that the difference between the groups was extremely significant (p -< 0.0001).

DISCUSSION

This pain reduction can be attributed to neurological suppression, due to stimulation of cutaneous mechanoreceptors (Campolo, Babu et al. 2013). Based on this theory, the mechanical stimulus provided by KT acts through fast conducting fibers that synapse with inhibitory interneurons upon reaching the gelatinous substance, thus promoting portal closure and blocking passage to nociceptive stimuli.[6]

It is also suggested that KT can improve proprioception by various mechanisms including normalizing muscle tone, relieving pain intensity, exciting skin receptors, and correcting malalignments (Słupik, Dwornik et al. 2006). Hence, the decreased perceived pain and improvement of ability to generate peak torque as well as enhancing proprioception in situ could lead to increased number of repetitions of tests in this study, which suggests the improvement of functional performance.[9]

CONCLUSION

On the basis of the present study , It can be concluded that inhibitory kinesiotaping technique can reduce pain and disability in patients with knee osteoarthritis.

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