



# Effects of kinesiology taping in acute ankle sprain

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## ABSTRACT

**OBJECTIVES:** The objective of this randomized control trial study was assess the effectiveness of a kinesio-taping in alleviating symptoms associated with ankle sprains.

**METHODOLOGY:** In this experimental study, a total of 30 patients were chosen as participants. The patients were divided into two groups: experimental group A consisting of 15 patients, and control group B also consisting of 15 patients. The data collected from both groups were compared and analyzed using SPSS version 21.

**RESULTS:** Statistical analysis shows that that there are significant differences in the efficacy of both treatments and Kinesiotaping has special advantages in treatment of Ankle Sprain. In most of the patients it shows better results and in very few patients this treatment is less efficient.

**CONCLUSION:** Efficiency shown by both treatments was random. Kinesio taping with standard treatment protocol showed better results as compared to the standard treatment protocol alone for ankle sprain. In some patients kinesio taping was less effective and on the other hand standard treatment shown good results in other patients. Kinesio taping showed better results in severe cases where standard treatment alone have less effectiveness

So we can say that kinesio taping with standard treatment shown better results as compared to the standard treatment protocol alone for ankle sprain, and have dramatic effects in comparison with Standard Treatment.

**KEYWORDS:** Kinesio taping, Ankle Sprain, Stability Exercise, Mobilization, FAOS, Pain, Instability, Ligament tear

**DOI Number:** 10.48047/nq.2023.21.6.NQ23158

**NeuroQuantology2023;21(6): 1573-1577**

## INTRODUCTION

The most prevalent musculoskeletal injuries are ankle sprains, and the most prevalent victims are athletes with excessive motion and activity. The most probable etiology

of ankle sprain in soccer players is this excessive range of movement. (1) An individual with an acute sprain of the ankle has functional constraints owing to serious pain, restricted movement range, and enhanced ankle



instability. One of the most prevalent symptoms is balance disorder. Ankle sprain improves ankle instability, influencing static and dynamic equilibrium. (2).

Rehabilitation therapists utilize taping as an intermittent therapeutic approach to alleviate pain and promote stability in the knee. Taping impacts are pain relief in the impacted areas, blood circulation boost, and function enhancement. (3). Previous taping trials for the lower extremities revealed rises in isokinetic muscle function, upper extremity grip, and isometric strength. (4). Kinesio-tape (KT) taping is used as an option to more proven ankle sprain taping and bracing methods. KT utilizes the latest type of elastic tape created by Dr. Kenzo Kase in the 1970s and was intended to provide therapeutic advantages while offering muscle and joint support and stability without limiting the variety of movement of the body (5). Ankle sprain is one of the most common injuries of musculoskeletal and is heavily linked with sporting operations. A sprain refers to an injury where the ligament is stretched or torn due to damage to the soft tissues. The exact cause of this injury is not fully understood. However, there is a prevailing belief that an ankle sprain occurs when there is excessive movement of the ankle, particularly when the foot is excessively inverted or everted during activities like running or landing after a jump. In the case of a lateral knee sprain, the anterior talofibular ligament (ATFL), calcaneofibular ligament (CFL), and posterior talofibular ligament (PTFL), which provide stability to the outer part of the ankle, are typically affected and damaged. (6)

Taping techniques for the prevention of ankle sprain recurrence and improving ankle stability proprioception in patients with chronic ankle disease are becoming increasingly important. However, after taping therapy was applied, no trials were performed to evaluate walking motion of amateur soccer players with lateral ankle sprains. (7). The most common cause of injury is inversion and motion of the area flexed ankle. Predisposing factors are

history of ankle joint sprains, ligament hyper negligence syndrome, and specific malalignment, like limb varum and pes cavo-varus. (8). Hyper-supination with external rotation during walking is the leading cause of Lateral ankle sprains. Lateral ankle sprain can also be caused by excessive inversion and internal rotation of foot followed by external rotation of the lower leg. Hyper-plantar flexion is of the factor which can also lead to lateral ankle sprain. (9). Martin et al said that 80% of patients with acute lateral ankle sprain had subtalar joint injury. PTFL injury followed by dislocation and fracture is only found in severe ankle sprain. (10). Hypo-mobility, and reduced ROMs are also caused by the mechanical instability. Restricted dorsiflexion is considered to be a sign of lateral ankle sprain. If there is restricted dorsiflexion on talocrural joint, the respected joint won't able to reach its closed pack position throughout the stance phase of gait which can lead to inversion and internal rotation. (11)

In this study we will determine the effectiveness of kinesio-taping in relieving symptoms of ankle sprain. **MATERIALS AND METHODS**

This randomized control trial took place in the Physiotherapy Department of Islam Medical College and Teaching Hospital in Sialkot. The sample population was divided into two groups: Group A (Experimental Group) and Group B (Control Group), each consisting of 15 patients with acute ankle sprain. The sampling technique employed in this study was non-probability convenience sampling. The duration of the study spanned 3 to 4 months following the approval of the research synopsis. Data was collected using the FAOS Foot & Ankle Survey. Data analysis was performed using SPSS version 21. Each patient underwent a four-week intervention period, and data was collected on the first day and at the end of every two weeks during this period. For Group A (Experimental Group) following interventions are applied: -



- ROMs exercises strengthen exercises and stability exercises with kinesiology taping. The aim of the exercise protocol was to decrease the symptoms of ankle sprain.

For Group B (Control Group) following interventions are applied:-

- Exercises strengthen exercises and stability exercises without kinesiology taping. The aim of the exercise protocol was to decrease the symptoms of ankle sprain.

### RESULTS

In this study, a total of 30 participants were included, with 15 participants assigned to the Experimental Group and 15 participants assigned to the Control Group. In the Experimental Group, 80% of the participants were males, while 20% were females. Similarly, in the Control Group, 80% of the participants were males, and 20% were females.

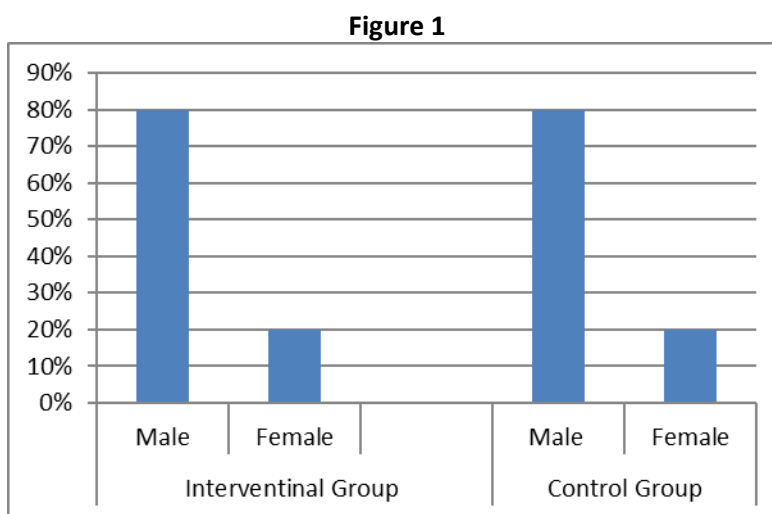


Figure 1 show that in Group-A (intervental group) 80% were males and 20% Females. In Group-B (control group) 80% were males and 20% Females.

**Table 1 Showing Foot Ankle Outcome Scale Pain Score after Treatment Completion**

Foot Ankle Outcome Scale Pain Score After Treatment Completion				
Specification Of Groups		Frequency	Percent	
Intervental Group	Valid	Mild Pain	12	80.0
		Moderate Pain	3	20.0
		Total	15	100.0
Control Group	Valid	Mild Pain	11	73.3
		Moderate Pain	4	26.7
		Total	15	100.0

In interventional group according to the foot ankle outcome score for pain 12 patients had mild pain, and 3 patients had moderate pain. While in control group 11 patients had mild pain and 4 patients had moderate pain after treatment completion.

**TABLE 2: Foot Ankle Outcome Scale Symptoms Score after Treatment Completion.**

Foot Ankle Outcome Scale Symptoms Score After Treatment Completion		
Specification Of Groups	Frequency	Percent



Interventional Group	Valid	Mild Symptoms	10	66.7
		Moderate Symptoms	5	33.3
		Total	15	100.0
Control Group	Valid	Mild Symptoms	6	40.0
		Moderate Symptoms	7	46.7
		Severe Symptoms	2	13.3
		Total	15	100.0

Based on Table 2, in Group A, out of the 15 patients, 10 had mild symptoms of ankle sprain, and 5 had moderate symptoms after completing the treatment. In Group B, out of the 15 patients, 5 had moderate symptoms, 6 had mild symptoms, 7 had moderate symptoms, and 2 had severe symptoms of ankle sprain after completing the treatment.

**TABLE 3: Foot Ankle Outcome Scale Disability Score After Treatment Completion**

Specification Of Groups		Frequency	Percent	
Interventional Group	Valid	Mild Difficulty	14	93.3
		Moderate Difficulty	1	6.7
		Total	15	100.0
Control Group	Valid	Mild Difficulty	14	93.3
		Moderate Difficulty	1	6.7
		Total	15	100.0

In interventional group 14 participants had mild difficulty, 1 participant had moderate difficulty in sports and recreational activities. In control group 14 participants had mild difficulty and 1 participant had moderate difficulty in sports and recreational activities after treatment completion.

### DISCUSSION

In the current study there were thirty participants divided equally in two group, the interventional group and control group. The mean age of the interventional group was 23.33 Std. 4.639 and mean age of control group was 21.73 Std. 4.511. Out of 15 participants 3 were female and 12 were males in interventional group and in control group 3 were female and 12 were males.

The purpose of the experiment was to investigate whether Kinesio-taping applied to the anterior and lateral part of the ankle would improve ankle proprioception compared to an untaped ankle. A total of 30 subjects, comprising 15 men and 15 women between the ages of 18 and 30, participated in the study. (12)

simon, Janet MS, ATC et.al It was discovered that wearing KT (kinesiology tape)

for a prolonged period of time led to an improvement in proprioceptive deficits. Following the application of the tape, both individuals with and without ankle instability experienced similar enhancements in conscious proprioceptive awareness. (13)

Study conducted in 2015 Research suggests that the application of Kinesio Taping is not effective in reducing acute swelling following an ankle sprain in athletes. (14)

Another study conducted by Sun-Min Lee and Jung-Hoon Lee states that amateur soccer player who experienced a Grade 2 medial ankle sprain during a match found that the daily application of ankle inversion taping using kinesiology tape for two months was an effective therapy. The results demonstrated that ankle inversion taping using kinesiology tape is a beneficial treatment option for patients with a medial ankle sprain. (15)

Byeong-Jo Kim et.al said in their study that continual consumption of kinesiology tape in ankle balance taping is also an efficient dealing for improving the ankle stability of patients with ankle unsteadiness. (16)

### CONCLUSION



Joint mobilization and balance trainings with kinesio taping play an important role in preventing and treating ankle sprains, these two protocols with kinesio taping must be included in rehabilitation programs of ankle sprains. Both these methods have shown high benefits in training or improving the condition.

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