

Satisfaction Rate in Geriatrics with Ankle Sprain to Facilitate Movement with Kinesio-Taping

Tanzeela Iqbal^a, Mahnoor Tayyab^a, Zarmeem Zerish^b, Fahad Tanveer^c

^a Department of Rehabilitation Science, The University of Faisalabad.

^b Assistant Professor Rehabilitation Sciences at The University Of Faisalabad.

^c Professor Rehabilitation Sciences at The University Of Faisalabad.

Correspondence: tanzeelaiqbal62@gmail.com

ABSTRACT

Background and Objectives: Ankle sprain is a common musculoskeletal injury characterized by damage to the ligaments supporting the ankle joint, often caused by an inversion trauma. This injury the ligament, leading to acute soft tissue swelling, pain, and potential instability in the long term. This study aims to determine satisfaction rate in geriatrics with ankle sprain to facilitate movement with kinesio taping. Kinesio taping is a therapeutic technique used in physiotherapy and rehabilitation to support injured muscles, relieve pain and prevent injury. To determine satisfaction rate in geriatrics with ankle sprain to facilitate movement with kinesio taping.

METHODOLOGY: A crosssectional study with the sample size of 289 patients with ankle sprain were recruited from the age group 55 to 70 years. SPSS version 27.0 was used for data analysis. Study completed in 6 months and a convenience sampling technique is used. The inclusion criteria for present study consider all Geriatric patient with ankle sprain and age between 55 to 70 years and exclusion criteria was Participants having history of red flags.

RESULTS: AIn current study, 289 individuals with the male participants are 54.1% and a female participant are 45.5% having a mean of 1.8 and standard deviation of 0.769. Thus it could be proving that the k taping is somehow beneficial if use alone but with manual therapy its progressiveness enhances and ankle sprain improves also with a rapid rate.

CONCLUSION: The study concludes that satisfaction rate in geriatrics with ankle sprain to facilitate movements with kinesio taping is 47.2% and 25.5% have neutral review about kinesio- taping respectively. Thus it could be proving that the k taping is somehow beneficial if use alone but with manual therapy its progressiveness enhances and ankle instability improves also with a rapid rate.

KEYWORDS: Satisfaction Rate, Geriatrics population, Ankle Sprain, Kinesio Taping

INTRODUCTION

An ankle sprain is an injury to the ligamentous structures supporting the ankle joint, typically caused by an inversion trauma of the ankle. The majority of ankle sprains affect the lateral ligaments, particularly the anterior talofibular ligament. Ligaments help to stabilize the joint. Subtalar joint is formed between inferior aspects of talus bone and the superior aspects of calcaneus. Subtalar joint provides 15 degree of eversion and 35 degree of inversion. Acute ankle sprains often result in soft tissue swelling, pain, and recurrent injuries due to instability. Fibularis muscles, located in the lateral compartment of the leg, play a role in ankle

sprains as they are forcefully stretched during inversion, leading to potential muscle injury and the development of myofascial trigger points. (1)

An ankle sprain involves excessive supination of the rear foot on an externally rotated lower leg, leading to injury of the ligaments and surrounding structures. Recurrent ankle sprains are common, with a history of previous sprains being the greatest risk factor. Frequently occurring sprain can lead to the development of chronic ankle pain, leading to altered postural control, sensorimotor deficits, and reduced physical activity. (2)

How to cite this: Iqbal T, Tayyab M, Zerish Z, Tanveer F. Satisfaction Rate in Geriatrics with Ankle Sprain to Facilitate Movement with Kinesio-Taping, International Journal of Healthcare Profession. 2024; 1(1):30-34.

Ankle sprains in older individuals may result from poor muscle conditioning, proprioception and strength training, leading to increased susceptibility to injury during physical activities.(3)

Ankle sprains can be classified into three major types: lateral, medial (deltoid), and syndesmotic (high) ankle sprains. Lateral sprains are the most common type, accounting for up to 80% of cases, and are often of the inversion type. (4)

Ankle sprains in the older population can lead to complications. Studies have shown that the incidence of complications is high in this population. Complications can include chronic ankle instability (CAI), osteochondral lesions of the talus (OLT), and injuries to other ligaments around the ankle. Avulsion fractures and midsubstance injuries are common types of injuries associated with ankle sprains also including deep vein thrombosis (DVT) and arterial injuries. (5)

3
Older age is a risk factor for ankle sprains, with the peak incidence occurring between fifteen and nineteen years old. In addition, when it comes to ankle sprains, women over thirty experience a higher rate than men. Other intrinsic factors associated with ankle sprains include a higher body mass index (BMI) and weight. Neuromuscular stability deficits and longer time to stabilize after performing a task, such as jumping, are also risk factors for ankle sprains. Once you've sprained your ankle or had another type of ankle injury, you're more likely to sprain it again. Poor strength or flexibility in the ankles may increase the risk of a sprain. Shoes that don't fit properly or aren't appropriate for an activity, as well as high-heeled shoes in general, make ankles more vulnerable to injury. (6)

Arterial injuries, such as intimal tears of the posterior tibial artery, can occur even with minor ankle injuries, necessitating a high index of suspicion for diagnosis and prompt revascularization. (7)

One study found that up to 40% of ankle sprains develop chronic symptoms, including pain, swelling, instability, and recurrence that persists for at least 12 months' post injury. Another study reported that 72.6% of patients with ankle sprains still had residual symptoms 6 to 18 months after the injury, with 40.4% experiencing moderate to severe symptoms and limitations in daily activities. (8)

Prevalence of foot and ankle pain in middle and old age was 24% for frequent foot pain and 15% for frequent ankle pain. (9)

It was important to evaluate how the kinesio taping (KT) acts on the injured ankle. This elastic bandage

was introduced in the 1970s by Kenzo Kase and has become very popular over the last few decades, used widely in physiotherapy for musculoskeletal disorders affecting both the upper and lower limbs. Kinesiology taping (KT) is a physical therapy technique that provides support and stability to muscles and joints without restricting movement. It is a complementary treatment that is often used in combination with other interventions. KT is made of a thin, elastic tape that is applied directly onto the skin. It follows the path of muscles or nerves and can be applied to any part of the body. (10)

However, another study found that Kinesio taping did not improve balance performance in individuals with recurrent ankle sprains Kinesio taping significantly enhanced gait functions, range of motion, muscle activation, and postural sway, based to a full review and meta-analysis. older population with chronic ankle instability. Additionally, a case study reported that ankle eversion taping using Kinesio tape decreases ankle instability and pain, and hence enhances functional dynamic balance in a patient with ankle inversion sprain. (11)

METHODOLOGY

This cross-sectional study was conducted at Ali Fatima Hospital and at Mumtaz Bakhtawar Hospital, Lahore. We enrolled 289 patients and conducted a study on male and female between the age group 55 to 70 years. Such participants are excluded which have history of infection, history of fracture, history of neurological symptoms, significant visual or vestibular impairment. The study was conducted from 12 February to 5 July 2024, as the frequency of regular visits to Ali Fatima hospital and Mumtaz Bakhtawar Hospital, Lahore physiotherapy department is generally three months for osteoporosis patients. The inclusion criteria includes those geriatric patient with ankle sprain of almost 4 week ,acute and chronic ankle sprain patients Patient aged between 55 to 70 years, both male and female patients, diagnosed ankle sprain patients of grade 1 and 2.

In this study determines that the satisfaction of kinesio taping in geriatrics diagnosed with past incidence of falls in physiotherapy department of Ali Fatima Hospital, Lahore. It is common in eversion-external rotation mechanisms. It is often associated with osteochondral lesions, syndesmotic lesions, or fractures(5)Ankle sprain: Common lower limb injury in geriatric population.Majority affect lateral ligaments, especially anterior talofibular ligament.(29)

RESULTS

Out of 289 participants 41.4% population belongs to 55 to 60 years, 36.9% population belongs to 61 to 65 years and 21.4% population belongs to 66 to 70 years.

Table 1 Age (Years)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	55-60	120	41.4	41.5	41.5
	61-65	107	36.9	37.0	78.5
	66-70	62	21.4	21.5	100.0
	Total	289	99.7	100.0	
Missing System Total		1 290	.3 100.0	Mean Std.Deviation	1.8 0.769

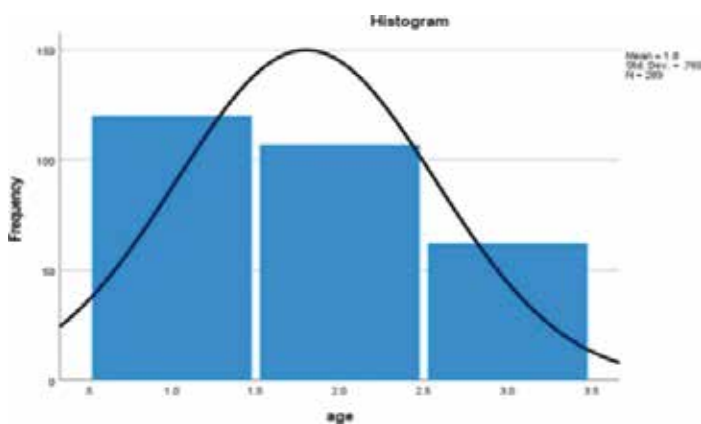


FIGURE 1 HISTOGRAM OF AGE

Table 2 Usage of kinesiio taping (Weeks)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 1 week	73	25.2	25.3	25.3
	1-2 weeks	121	41.7	41.9	67.1
	2-4 weeks	62	21.4	21.5	88.6
	Over 4 weeks	33	11.4	11.4	100.0
	Total	289	99.7	100.0	
Missing System Total		1 290	.3 100.0		

Table 2 showed that Out of 289 participants 41.7% participants uses k taping for 1 to 2 weeks, 25.2% participants uses k taping for less than 1 week, 21.4% participants uses k taping for 2 to 4 week and 11.4% participants uses k taping for over 4 weeks.

Table 10 showed that Out of 289 participants, 28.6% population are satisfied with experience of using kinesiio taping for ankle sprain, 24.1% have neutral comment with experience of using kinesiio taping for ankle sprain, 21.4% are satisfied with your experience of using kinesiio taping for ankle sprain, 14.5% popula-

tion are dis satisfied with experience of using kinesiio taping for ankle sprain and 11.0% population are very dissatisfied experience of using kinesiio taping for ankle sprain.

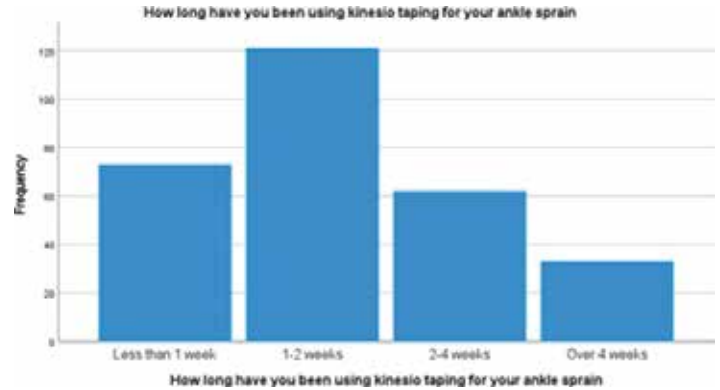


FIGURE 2 HISTOGRAM of Usage of kinesiio taping (Weeks)

Table 3 Level of Satisfaction

Valid	Very Satisfied	62	21.4	21.5	21.5
	Satisfied	83	28.6	28.7	50.2
	Neutral	70	24.1	24.2	74.4
	Dissatisfied	42	14.5	14.5	88.9
	Very Dissatisfied		11.0	11.1	100.0
	Total	289	99.7	100.0	
Missing System Total		1 290	.3 100.0		

FIGURE 3 HISTOGRAM of Level of Satisfaction

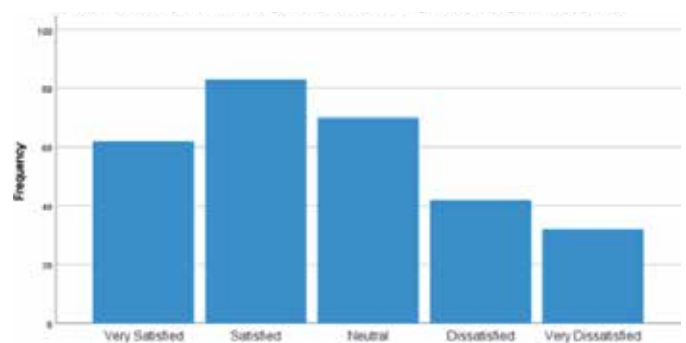


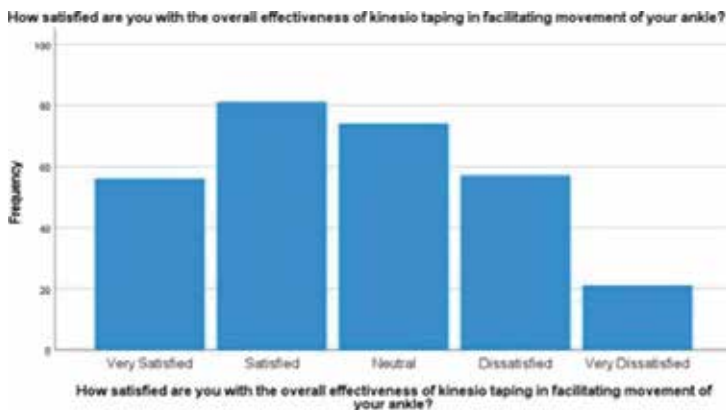
Table 4 showed that Out of 289 participants, 27.9% population are satisfied with overall effectiveness of k tape in facilitating movement at ankle joint, 25.5% population have neutral comment with overall effectiveness of k tape in facilitating movement at ankle joint, 19.7% population are dissatisfied with overall effectiveness of k tape in facilitating movement at ankle joint, 19.3% population are very satisfied with overall effectiveness of k tape in facilitating movement

at ankle joint, 7.2% population are very dissatisfied with overall effectiveness of k tape in facilitating movement at ankle joint. the quality of care given to cataract patients, which will eventually improve surgical outcomes and patient satisfaction, by deepening their strategies. In short, our study Provide a summary of the current procedures for routine cataract surgery, the Preferred procedure in our data is phacoemulsification under topical and intracameral anesthesia for mature cataracts, most participants chose phacoemulsification under retrobulbar anesthesia.

Table 4 Level of Satisfaction

Valid	Very Satisfied	56	19.3	19.4	19.4
	Satisfied	81	27.9	28.0	47.4
	Neutral	74	25.5	25.6	73.0
	Dissatisfied	57	19.7	19.7	92.7
	Very Dissatisfied		7.2	7.3	100.0
	Total	289	99.7	100.0	
Missing System		1 290	.3		
Total			100.0		

FIGURE 4 HISTOGRAM of Level of Satisfaction



DISCUSSION

Ankle sprain is common lower limb injury in geriatric population. Majority affect lateral ligaments, especially anterior talofibular ligament.(29)Often associated with osteo-chondral lesions, syndesmotic lesions, or fractures. In our study age group was 55 to 70 years with mean age was 62 years which is consistent with previous studies that have focused on older population with ankle sprain a study by Shame Halim Kertanegara61 et al (2016) find ankle sprain in older population of different random age group of 240 patients with mean age was 62+-1. The standard deviation of 8 years indicates

the majority of participants were 55 to 70 years old in our study which is also consistent with previous research. The standard deviation of 8 years indicates that the majority of participants were between 55 to 60 years old in our study which is also consistent with previous

research. The narrow age range in our study suggest that the participants were largely composed of individual in the early stage of older adulthood which may be implication for our findings. In comparison to other studies, our findings suggest that our sample population was slightly older than some previous studies but different to others.

Our study indicates that the mean age of ankle sprain among our population was 62 years with a standard deviation of 0.769. CAI), which comes through repeated sprains. A combination of the SPE and KT may be useful to volleyball players with CAI in enhancing their efficiency and ability while generating favorable results. Ankle sprains resulting from inversion are a common injury among basketball players. (5)

KT may be an effective choice for a safe return to activity since it may help patients with recurrent ankle sprains increase the stability of their static joints. Kinesio tape is recommended for use in clinical practice to both prevent and manage lateral ankle injuries because of its beneficial effects on proprioception, muscle endurance, and activity performance. This is because postural control is impacted. (30)

Kinesio tape, on a different conjunction, could assist with postural control during landing.(10) One typical injury that arises from a sudden supination moment is a lateral ankle sprain. It damages the lateral ligaments and cartilaginous surfaces and affects functional ankle stability and balance in multiple people. (12)

The impact of tape on functional performance has been questioned in the literature. Kinesiotaping (KT) is a new technique being used for both performance enhancement and rehabilitation. It seems that little research have examined the impact of ankle KT® on functional performance so far. KT in addition to athletic tape produced faster performance times than placebo and non-taped conditions in the single-limb hurdle test. For the benefit they provided and supporting evidence, all biomechanical or functional bandages—elastic or inelastic—applied in CAI were beneficial, emphasizing patient perception, kinematics, agility, and motor control, as well as dynamic and static balance. As a result, bandages facilitate ankle functionality. (13)

When a strong external force is applied to the ankle

joint, the ligament can tear or rupture, resulting in an ankle sprain. The aim of this study was to investigate the reaction of adult patients with chronic ankle instability to ankle eversion tape in the form of sudden inversion. For both therapeutic and preventive purposes, taping can be used with ankle injuries.

CONCLUSION

The study concludes that satisfaction rate in geriatrics with ankle sprain to facilitate movements with kinesiio taping is 47.2% and 25.5% have neutral review about kinesiio- taping respectively. Thus it could be proving that the k taping is somehow beneficial if use alone but with manual therapy its progressiveness enhances and ankle instability improves also with a rapid rate.

ACKNOWLEDGEMENT: None

CONFLICT OF INTEREST: None

GRANT SUPPORT AND FINANCIAL DISCLOSURE: None.

REFERENCES

1. Jordt I, Thorninger R, Wæver D. Joint Infection following an Ankle Sprain- A Case Report. *Integr J Orthop Traumatol.* 2022;4(2):1-3.
2. Hubbard TJ, Wikstrom EA. Ankle sprain: pathophysiology, predisposing factors, and management strategies. *Open access journal of sports medicine.* 2010;115-22.
3. Williams GN, Jones MH, Amendola A. Syndesmotomic ankle sprains in athletes. *The American journal of sports medicine.* 2007;35(7):1197-207.
4. Nuhmani S, Khan MH. Lateral ankle sprain—an update. *Journal of musculoskeletal research.* 2013;16(04):1330003.
5. Sintong L. Syndesmosis Instability. *Orthopaedic Journal of Sports S00851.967121Medicine.* 2023;11(2_suppl):2325
6. Vuurberg G, Altink N, Rajai M, Blankevoort L, Kerkhoffs GM. Weight, 7) BMI and stability are risk factors associated with lateral ankle sprains and chronic ankle instability: a meta-analysis. *Journal of ISAKOS.* 2019;4(6):313-27.
7. Godoy-Santos A. Complexities Involving the Ankle Sprain, An issue of Foot and Ankle Clinics of North America, E-Book: Elsevier Health Sciences; 2023. 9) Spek RW, Smeeing DP, van den Heuvel L, Kokke MC, Bhashyam AR, Kelder JC, et al. Complications after surgical treatment of geriatric ankle fractures. *The Journal of Foot and Ankle Surgery.* 2021;60(4):712-7.

8. Waterman BR, Owens BD, Davey S, Zacchilli MA, Belmont Jr PJ. The epidemiology of ankle sprains in the United States. *Jbjs.* 2010;92(13):2279-84. 11) Hsiao C-K, Tsai Y-J, Lu C-W, Hsiung J-C, Hsiao H-Y, Chen Y-C, et al. Effects of Kinesio taping on forearm supination/pronation performance fatigability. *BMC Musculoskeletal Disorders.* 2022;23(1):131.
9. Seo H-D, Kim M-Y, Choi J-E, Lim G-H, Jung S-I, Park S-H, et al. Effects of Kinesio taping on joint position sense of the ankle. *Journal of physical therapy science.* 2016;28(4):1158-60.
10. Pflüger P, Valderrabano V. Sprain of the medial ankle ligament complex. *Foot and Ankle Clinics.* 2023;28(2):355-67.
11. Easley ME. Updates on Total Ankle Replacement, An issue of Foot and Ankle Clinics of North America, E-Book: Updates on Total¹⁴ Ankle Replacement, An issue of Foot and Ankle Clinics of North America, E-Book: Elsevier Health Sciences; 2024.

Authors Contributions:

Tanzeela Iqbal: Substantial contributions to the conception and design of the work.

Mahnoor Tayyab: Design of the work and the acquisition. Drafting the work. Final approval of the version to be published.

Submitted for publication: 17-01-2024

Accepted after revision: 19-0-2024