



Original Article

Effectiveness of Kinesio-Taping and Conventional Therapy for Non-Specific Chronic Low Back Pain

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ABSTRACT

Chronic non-specific low back pain, which is treated in orthopedic rehabilitation settings, is a frequent musculoskeletal issue. Lumbar spondylosis, Psychogenic Low Back Pain, Spinal Stenosis and poor posture are all causing pain for the patient. Kinesio-Taping helps to reduce or eliminate discomfort. **Objective:** To see how effective kinesio-tapping and traditional therapy are for non-specific chronic low back pain. **Methods:** This was a quasi-experimental study design in which 30 patients were recruited using a convenient sampling sample, with 15 individuals in each group (Group A, Kinesio-Tapping with Conventional Therapy includes stretching, strengthening and hot pack) Group B which consists solely of standard conventional therapy. An independent T-Test for inter-group comparison and a paired sample T-Test for within-group analysis were used to assess the Oswestry Low Back Pain Disability and Numeric Pain Rating Scale. **Results:** There was a significant change between the baseline and post-treatment NRPS values. Mean difference of 10.42 and 3.14 were reported between the pretreatment and post treatment values of NPRS in KT taping Group which was significant (p-value < 0.05). Mean difference of 14.18 and 3.68 were reported between the pretreatment and post treatment values of NPRS in Conventional PT Program Group which was significant (p-value < 0.05). **Conclusions:** Kinesio-Taping in conjunction with Conventional Therapy is more effective than Conventional Therapy alone in treating Chronic Non-specific Low Back Pain.

INTRODUCTION

Popular rehabilitative taping method Kinesio Taping aids the body's natural recovery. Kinesio Tex Tape is latex-free and can be worn for days to support and stabilize muscles and joints without affecting a range of motion and further soft tissue manipulation to enhance therapeutic manual treatment [1]. Lifting causes skin convolutions, which increase interstitial space and reduce inflammation [1]. Lumbar strains are acute or chronic stretch injuries to the lower back's ligaments. Low back pain is often caused by

lumbar strain. Trauma, overuse, and inappropriate use can cause harm. Lumbar strain is most common in those in their 40s, although it can affect anyone. Mechanical straining of the lumbar tissues causes lower back pain. The severity of the injury depends on low back muscular tension and spasms, which can range from moderate to severe [2]. Chronic low back pain (CLBP) is a prevalent ailment that has serious social and economic consequences. In the treatment of chronic pain, kinesio-taping (KT) has lately

acquired favour [3]. As this is the first comprehensive review to report the effects of KT on CLBP specifically. The review included five studies with a total of 306 individuals that satisfied the criteria for inclusion and were related to the study's aim [4]. There is a very little evidence that Kinesio Taping is more beneficial than sham taping in improving endurance of muscle, muscle control and range of motion (ROM). According to limited data, KT appears to be more beneficial than standard physical therapy treatment in improving postural control of the transversus abdominus muscles and increasing brain cortical potential. KT treatment is not a substitute for traditional physical treatment or exercise [5]. The benefits of KT alone or in accordance with another treatment were compared to exercise or standard physical therapy in different study trials. As comparison to other therapies, moderate evidence shows that KT is no more successful in relieving pain and disability measures as a solo treatment or in accordance with another treatment. Very little data from one study shows that Kinesio Taping coupled with standard physical therapy treatment is preferable to physical therapy alone in boosting APC of the transversus abdominus (TrA) muscles [6]. Very limited evidence from the same experiment shows that KT with physical therapy is better in improving MRCP in three of the six regions studied when compared to the physical therapy alone. In terms of ROM, there was minimal indication that KT plus regular physical therapy were no better than physical therapy itself [7].

The objective of the study was to check the benefits of kinesio-taping against standard physiotherapy in the application of Chronic Low Back ache, with the aim of reducing pain and improving muscle and joint support and stability.

METHODS

The study design was a quasi-experimental in which 30 patients were recruited using a convenient sampling technique, with 15 individuals in each group (Group A, Kinesio-Tapping with Conventional Therapy includes stretching, strengthening and hot pack) Group B which consists solely of standard conventional therapy contains (stretching, strengthening and hot pack). This was a single-blind experiment in which patients were not randomized. The study was completed in 6 months and it was started in May 2019 and completed in Dec.2019. The sample size calculated by the following formula keeping the margin of error (d^2) equal to 5% and level of significance ($Z_{1-\alpha/2}$) equal to 95%. The inclusion criteria includes older adults both male and female, age 25-45 years, Pain from at least of 7 to 9 months, Clinically diagnosed for having non-specific low back pain, mechanical or non-mechanical low back pain and exclusion criteria includes patients having traumatic

back pain, malignant or neoplastic back pain, back pain of seronegative or inflammatory origin., pregnant women, Pain of sacroiliac joint, Piriformis Syndrome, Syndrome of Iliotibial band. To measure the severity of pain, Numerical Pain Rating Scale was used, and to assess disability Oswestry Low Back Pain Impairment Questionnaire was utilized [8, 9]. SPSS version 23.0 software was used to examine the data collected. For demographics, frequency and percentages were collected. An independent t-Test used for comparison between 2 groups and a paired sample t-Test for within-group analysis were used to assess the Oswestry Low Back Pain Disability Questionnaire and the Numeric Pain Rating Scale. The ethical approval was taken from University of health sciences review committee and it was approved in July 2019 with ref. # t-DPT/UHS/331-2019.

RESULTS

The age distribution across two treatment groups is shown in Table 1. The NPRS of the Kinesio Taping Group participants was 6.8571 ± 0.29 years, with a lowest value of 51 and a highest of 70 years. The participants in the Conventional Physiotherapy Treatment programme had an average age of 6.9375 ± 0.29 years, with a lowest of 51 years and a highest of 70 years old. No. significant differences of NPRS were reported at baseline and post treatment with p-value < 0.05 .

Table 1: Distribution of Age across Two Groups

Group Statistics				
	Study Groups	No	Mean \pm SD	Std. Error Mean
ODI Before Treat	Kinesio taping	14	34.857 \pm 2.537	.67821
	Conventional Therapy	16	35.000 \pm 3.577	.89443
ODI After Treat	Kinesio taping	14	24.428 \pm 5.243	1.40139
	Conventional Therapy	16	20.812 \pm 5.049	1.26233
NPRS Before Treat	Kinesio taping	14	6.857 \pm 1.099	.29384
	Conventional Therapy	16	6.937 \pm 1.181	.29536
NPRS After Treat	Kinesio taping	14	3.714 \pm 1.138	.30434
	Conventional Therapy	16	3.250 \pm 1.125	.28137

Table 2 shows across the group comparison for NPRS. In test for Levene's Equality of Variances, significance of ODI before treatment was 0.085 while ODI after treatment was 0.872. Significance of NPRS before treatment was 0.782 while NPRS after treatment was 0.995.

Table 2: Across the Group comparison for NPRS

Test of Independent-Samples										
Variables		Test for Levene's Equality of Variances		Means t-test of Equality						
		F	Sig	t	Df	Sig (2_tailed)	Mean Difference	Std. Error Difference	The confidence interval for the difference is 95%	
								Lower	Upper	
ODI Before Treat	Equal variances assumed	3.198	.085	-.124	28	.902	-.14286	1.14838	-2.49522	2.20950
	Equal variances not assumed			-.127	26.93	.900	-.14286	1.12248	-2.44627	2.16055
ODI After Treat	Equal variances assumed	.026	.872	1.922	28	.065	3.61607	1.88120	-.23738	7.46953
	Equal variances not assumed			1.917	27.15	.066	3.61607	1.88610	-.25283	7.48498
NPRS Before Treat	Equal variances assumed	.078	.782	-.192	28	.849	-.08036	.41870	-.93803	.77732
	Equal variances not assumed			-.193	27.87	.848	-.08036	.41663	-.93396	.77324
NPRS After Treat	Equal variances assumed	.000	.995	1.121	28	.272	.46429	.41414	-.38404	1.31261
	Equal variances not assumed			1.120	27.38	.272	.46429	.41447	-.38559	1.31416

DISCUSSION

There always have been seen acceptance issues with new techniques and knowledge. Traditional practice usual kept continuous due to some advantages it carries such as being convenient and skill being at hand. It doesn't require to master new technique. On the other hand it is rational to some extent that why one should go for new technique when old one exists and working fine. It is this point that new techniques have to be tested in their efficacy, comprehension, being applicable and cost effective. Kinesio-taping is one of such technique that needs to be tested in scientific grounds for its comparative efficacy [10]. Although its efficacy is accepted and proven in osteopathic medicine for relieve of muscle tightness and joint and muscle functional disorders. However, its comparative efficacy was yet debatable. That weather it is more effective in comparison to other techniques used or so. As a general process this can be proven in different stages and region. Firstly it was started here in Pakistan to compare it with other conventional methods in practice. The most frequent technique used for relieve of muscle spasm here is stretching technique [11]. Stretching technique is also being used at vast level of relieve of under discussion case i.e. non-specific chronic low back pain. However, results were quite interesting as being expected from trial. The participants, both in the conventional physiotherapy group and that of Kinesio-taping with conventional physiotherapy group Maneuver, performed well and went towards improvement with statistical significant difference. There is an evidence that Kinesio Taping is more beneficial than sham taping in improving endurance of muscle, muscle control and range of motion (ROM) [12]. According to study in 2013, KT appears to be

more beneficial than standard physical therapy treatment in improving postural control of the transversus abdominus muscles and increasing brain cortical potential [13,14]. KT treatment is not a substitute for traditional physical treatment or exercise. However the Kinesio-taping with conventional physiotherapy group performed well [15-20]. If the age distribution in both groups be looked upon, in conventional therapy group curve of histogram is skewed negatively towards lower values of age, while the age range in Kinesio-taping with conventional physiotherapy group is evenly distributed with more individual in older ages. Still the participants in Kinesio-taping with conventional physiotherapy group performed better than conventional therapy group in terms of improvements in clinical presentation of paresthesia and pain [21].

CONCLUSIONS

For treating the chronic non-specific low back pain, Kinesio-taping combined with conventional physiotherapy is more successful than Kinesio-taping alone. Pain has been suppressed by combination of treatment with Kinesio-taping and conventional physiotherapy and improves the activity of daily livings. However, there was significant difference on pain improvement in both the groups.

Authors Contribution

Conceptualization: AT

Methodology: ST

Formal analysis: SR

Writing-review and editing: AZ

All authors have read and agreed to the published version of the manuscript.

Conflicts of Interest

The authors declare no conflict of interest.

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