International Journal of Physical Education and Sports Sciences
Vol. 13, Issue No. 07, October-2018, ISSN 2231-3745

# A Comparative Study of Kinesiotaping Versus Coordinating Exercises in Non-Specific Low Back Pain

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***Abstract – The purpose of the study was to compare the effect of Kinesiotaping and co-cordinating exercises in non-specific low back pain (NSLBP). Other objective of the study was awareness of Kinesiotaping in the patients of low back pain. 60 patients having non-specific low back pain (male and female) fulfilling the inclusion and exclusion criteria were selected from Swami Vivekanand University (Subharti University) Meerut. The subjects were randomly allocated in two groups. The subjects of group A were treated with application of Kinesiotaping on centre point of pain and the subjects of group B were treated with co-ordinating exercises. Pain and functional ability was depicated by using VAS Scale. To assess the effects of concern treatment mean, standard deviation and 't' ratio were computed and data analysis was done by using SPSS Version 15.0. Significant changes were found between both groups for VAS (Visual Analog Scale). Study shows that kinesiotaping has a significant effect on non-specific low back pain control.***

***Key Words : Kinesiotaping, Co-Ordinating Exercises, Non-Specific Low Back Pain.***

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## INTRODUCTION

Low back pain is the fifth most common reason for doctor visits that affects between 60-80% of people during their lives **(Burton A.K., Hollis S., 1995)**. The frequency of low back pain over the lifespan is projected to be as high as 84% and the prevalence of chronic low back pain is around 23% with low back pain affecting 11-12% of the population **(Balague F.I., Mannion A.F., 2012)**.

Non-specific low back pain (NSLBP) affects more than 90% of primary care patients **(Koes B.W., 2006).** Non-specific low back pain (Simple or Mechanical) is the generic term that refers to any form of back pain that is not linked to severe disease in the lumber area and has no specific cause. Traumatic injury, timber sprain or strain or pastural pressure may cause non-specific low back pain. Conditions such as spondylolysis and spondylolisthesis, disk harniation, spinal stenosis, compressed osteoparasis (Lumber Compression Fracture) or any congenital disease such as kyphosis and scoliosis may be secondary **(Atlas S.J., 2001)**.

The nature of physical activity varies with signs of non-specific low back pain **(Waddell G., 2004)**. Non-specific low back pain, however, occurs as pressure, muscle tension or weakness that is found below the costal margin and above the lower gluteal folds and is not due to a specific disease with or without involvement in leg pain **(Nachemson A.L., 2000)**.

Low back pain is considered a health condition that is largely self-limiting **(Pongel L.H., 2003)**. 80-90% of people with acute low back pain conditions are expected to recover within six weeks. Nonetheless, chronic lower back pain can occur between 10 and 20 percent **(Van Tulder M.W., Koes B.W. 1997)**. The 10 to 20 percent of patients with chronic low back pain are linked to about 70-80 percent of health care and social costs. When low back pain is chronic, it can be a significant source of long-term disability and work loss, resulting in a heavy socio-economic burden on health care systems in developed countries **(Nachemson A.L., Jonsson E., 2000)**.

Chronic low back pain is commonly associated with sleep problems, including longer sleep time, sleep disturbances, shorter sleep time, and less sleep satisfaction. Additionally, most people with chronic low back pain experience symptoms of depression or anxiety. Since the back anatomy is complex and pain perception is subjective and influenced by social factors, it is not easy to treat low back pain **(Koes B.W., Van Tulder, 2006)**.

Treatments for non-specific low back pain such as chemotherapy, compression, TENS, eye injections, laser therapy, massage, medical mri, spinal manipulation and lumbar aids are commonly

prescribed with little or no evidence to support their application. None of the widely available treatments will really provide a solution to the non-specific low back pain issue. Reduction in the number of chronic low back pain related complaints is minimal in most patients while unabated pain continues **(Paoloni M, Bernetti A., 2011)**.

A modern approach to treating non-specific low back pain is to help the affected area, calm the muscles and reduce the sensation of pain, and is called kinesiotaping. Extensive research studies found limited evidence for combining Kinesiotaping with co-ordination training to treat non-specific low back pain. Hence, this study aimed at contrasting the efficacy of kinesiotaping and pain and physical injury co-ordination is participants with non-specific low back pain.

## MATERIAL AND METHODS

**Subjects:**

60 patients having non-specific low back pain (male and female) were selected from the Department of Physiotherapy, Subharti University, Meerut. The age of the subjects were 30-40 years. The method of sampling was non-randomized.

**Criteria for inclusion:**

- Male and female both
- Low back pain non-specific (for example, between 6-12 weeks)
- No analgesics and no anti-inflammatory drugs were taken 3 days before the visit
- Not engaged in regular exercises programme for minimum of 2 months

**Exclusion Criteria:**

- Pregnancy
- Corticosteroid treatment in the previous 2 week
- Central nervous system disease
- Chronic Cardio-respiratory disease
- Nerve root compression (disc herniation and spondylolisthesis and Neurological compromise and Spinal stenosis)
- Serious spinal pathologies (fracture, tumars and inflammatory pathologies For example, spondylitis ankylosing or osteoporosis)

**Procedure:**

Subjects met the requirements for inclusion and exclusion were included in the analysis with their written consent and were easily split into two categories, Group-A (Kinesiotaping Group) and Group-B (Coordination Movement Group).

In Group-A Kinesiotaping, after washing the cotton treatment area to enhance tape consistency, was added to the middle point of pain. Those subjects were held for seven days.


**Group-A Kinesiotaping Application to the Centre Point of Pain**

In Group-B coordinating exercises were performed with the intensity of 15 repetitions per day for seven days. The co-ordination exercises protocol was given below:

- In standing position the subjects touched the knee with the hand with the height of heart.
- In quadruped position, elevate the arm and leg of contra lateral sides to place them in line with the trunk.
- Proprioception balance training on ball.
- Stretching exercise to stretch lower back and rear end muscles.

**Group-B Co-ordinating Exercises Group**

**Outcome Measures:**

The outcome measures of pain were taken using Visual Analog Scale (VAS) at base line (i.e., on 1st day before the treatment and on 8th day after the completion of treatment).

**Statistical Technique:**

To assess the effects of concern treatment mean, standard deviation and 't' ratio were computed. The data was analyzed using the software SPSS-15.0. the level of significance was set at 0.05 level.

## RESULT

To find out the significance differences between pre-test and post test means of visual analog scale and between both the groups 't' test was applied. The obtain 't' ratio was tested for the significant difference at 0.05 level. The findings pertaining, to it are presented in Table 1-3.

**TABLE-1**

**Significance Difference of Visual Analog Scale between Pre-Test and Post-Test of Group-A**

| Test | Mean | S.D. | 't' ratio |
|---|---|---|---|
| Pre-test | 5.67 | 1.241 | 15.5* |
| Post-test | 2.00 | 1.174 | |

Significant at 0.05 level 't' 0.05 (28) = 2.05

It is observed from Table-1 that the calculated 't' (15.5) was more than the tabulated 't' (2.05). Hence it may be considered that there was significant difference found between pre-test and post-test means of Visual Analog Scale of Group-A.

**The Scores are also Illustrated in Figure-1**

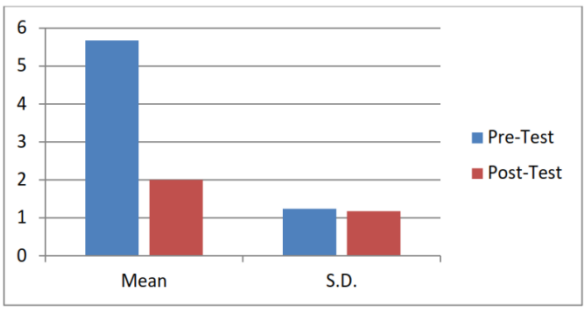


**Figure-1**

**TABLE-2**

**Significance Difference of Visual Analog Scale between Pre-Test and Post-Test of Group-B**

| Test | Mean | S.D. | 't' ratio |
|---|---|---|---|
| Pre-test | 5.73 | 1.741 | 7.48* |
| Post-test | 3.90 | 1.348 | |

*Significant at 0.05 level 't' 0.05 (28) = 2.05

It is observed from Table-2 that the calculated 't' (7.48) was more than the tabulated 't' (2.05). Hence it may be considered that there was significant difference found between pre-test and post-test means of Visual Analog Scale of Group-B.

**The Scores are also Illustrated in Figure-2**

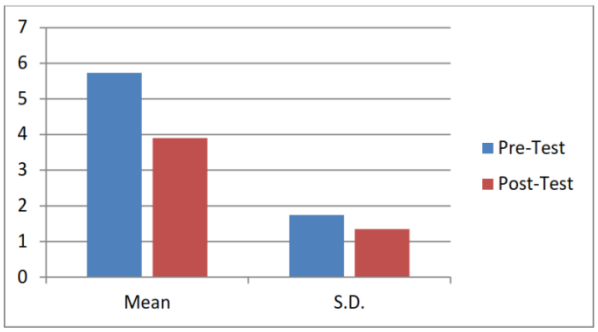


**Figure-2**

**TABLE-3**

**Significance Difference of Visual Analog Scale between Group-A and Group-B (According to Post-Test)**

| Test | Mean | S.D. | 't' ratio |
|---|---|---|---|
| Group-A | 2.00 | 1.174 | 5.82* |
| Group-B | 3.90 | 1.348 | |

*Significant at 0.05 level 't' 0.05 (28) = 2.05

It is observed from Table-3 that the calculated 't' (5.82) was more than the tabulated 't' (2.05). Hence it may be considered that there was significant difference found between Group-A and Group-B means of Visual Analog Scale according to Post-test.

**The Scores are also illustrated in Figure-3**

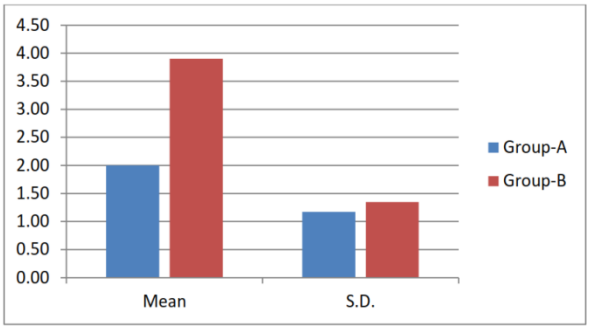


**Figure-3**

## DISCUSSION

Kinesiotaping is found to be significantly more effective in reducing pain intensity. The results are consistent with **(M. Paolini, et. Al., 2011)** findings that pain relief in patients with chronic low back pain was significant. This could be explained as the inhibition of pain perception occurs due to the stimulation of the mechanoreceptor caused by the mechanical displacement of the adhesive tape that occurs due to body movement. Stimulation of their large pressure and touch nerve fibers, thus over rides the small pain nerve fibres are causing decreased perception of pain.

It is also assumed that Kinesiotape raises the upper layers of the skin, creating more room between the skin and the underlying tissues, which helps to reduce the pressure on the lymph vessels and allows more space for absorption, discharge and increase the drainage of lymph through the tape region, which can help decrease swelling and pain in wounded regions.

## CONCLUSION

This could be explained as the unique elastic properties of Kinesiotape provide additional anatomical support to the muscles and joints during activities provide continues corrective proprioception from The region involved, which discourages dangerous movements while still promoting safe and healthy travel.

Kinesiotaping also improves the balance by strengthening the proprioception and the sound of the muscle. Various uses of kinesiology tape can also be used to enhance joint cohesion and improve the function of a joint that affects competing muscle groups and joint mobility.

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