

Effects of Kinesio Taping in Individuals with Non-Specific Neck Pain

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Abstract

Objective:

Purpose of the study is to study the effects of Kinesio Taping on individuals with non-specific neck pain.

Material and Methods:

The methodology comprises of 40 Individuals who were selected for the study. The individuals were selected from Karachi University and NED University, as the complaint of mechanical neck pain is common among students. SPSS (statistical package of social sciences version 23) were used to analyze data. Descriptive statistics were used to analyze the frequency and percentages and pre and post outcomes.

Results:

Finding revealed before the treatment the pain score was 6.50 standard deviation 1.53, while after the treatment it was 2.10 standard deviation 1.11. The mean decrease in both the pains was on average 4.40 units with significant p value less than 0.01.

Conclusion:

It has been concluded from the study that the neck pain was reduced when kinesio-taping was applied on the neck. Furthermore, study showed that the disability of the neck was widely affected and reduced because of taping.

Key Words: Neck pain, Neck disability, Taping, Kinesio-taping.

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INTRODUCTION

The International Association for the Study of Pain (IASP) defines pain as “An unpleasant sensory and emotional experience that is linked with actual or potential damage of the tissue or described in terms of such damage.” It is also explained that pain is an experience or a subjective psychological state. These qualitative mental episodes occur as a result of a specialized sensory system that is present in our body, which detects all sorts of physical stimulus that impinges on the sensory nerve endings called the receptors of the body (Ariens, 1999). One should understand that experience here is the things learned throughout the life process when the individual encounter any injury or damage (Bodfish et al., 2006).

Pain is explained primarily, emphasize on the phenomena of self-reporting, like if the individual experience any unpleasantness in their life, or any relation with pain or need any assistance so that they can easily deal with pain, they usually self-report this kind of condition. Therefore, the “gold-standard” settled for pain is the self-reporting system (Bogduk and Barnsley, 2000). Considering the general population the most common complaint is the pain of the neck region. Neck pain is defined as the pain that the individual experience arising from the superior aspect of the nuchal line, that runs laterally from the lateral margins around the neck, and inferiorly it is experiences through the first spinous process of the T1 vertebra, by a transverse line which is imaginary (Bonica, 1979).

The neck pain is often increased by the movements that occur in the neck, or by sustaining prolong postures. As the pain is experienced by the individual other symptoms also occur like stiffness, headaches, dizziness and brachialgia. These pains are often originated by the structures that are present in the cervical spine (Cohen, 2015). The neck pain be one of the most common musculoskeletal disorder. It developing from a musculoskeletal origin brings the symptoms of limiting the range of motion, which in turn lead to functional limitation causing difficulty in performing the activities of daily living (Fejer et al., 2006). The researchers studied the chronic natures of pain just to rule out how to manage this condition and reduce the intensity of the neck pain (González-Iglesias et al., 2009). Inside the neck, there are multiple organs that has a unique function to perform, and all of them are located in this area (Wright, 2017).

The neck pain is classified on the basis of mechanism, the neck pain can be mechanical pain, neuropathic pain or pain that is secondary to other cause (Kinesio Taping Methods). Mechanical neck pain is also known as non-specific neck pain. This occurs because of the supporting structures that are present around the spine including the muscles and ligaments. The common example of such pain is the pain arising from the facet joints, from the intervertebral disc or the myofascial pain (Kleinstueck, et al., 2011). Neck pain has physical, psychological as well as socioeconomic impacts the life of any individual. From the results of the Global Burden of disease study, the fourth leading cause towards the loss of years to disability is neck pain. Majority of the epidemiological studies reports

that the annual prevalence of the neck pain range from 15% to 50 % (Mostafavifar et al., 2015). The prevalence for non-specific neck pain in the general population varies from 9% to 22%. Females are more prone to develop neck pain than males. If appropriate treatment is not given, about 5-10% of patients with non-specific neck pain leads to chronic pain disorder (Merskey, 1986).

The studies also supported that neck mechanical neck pain also occurs from the occupation or profession of the individual; and the correct postures and positions of the head can result in better outcomes and relief of pain. Overall the quality of life of the individual can be improved if the person experiencing the pain get relieved of it (Mokdad et al., 2018). Neck pain can be resulted among individuals because of variety of conditions that can be genetic, or involving the psychopathology of the individual like depressions, anxiety or poor coping skills. Sleep disorders, smoking and sedentary life style can also lead to the occurrence of neck pain. Moreover, obesity is also suspected to cause neck pain, however those individuals who are obese and may be predisposed to the pain in neck can include elevated systemic inflammation, an increase in the mechanical stress and ground reaction forces, reduced strength of the muscles and other psychosocial factors (Montalvo et al., 2014).

Kinesio taping is a time tested therapeutic taping method that is using an elastic tape which is uniquely designed. This tape helps in enhancing the functions of many different tissues as well as physiological systems. This serve as a modality which can be applied and worn for extended periods of time and continues to give therapeutic benefits. It can give immediate as well as long term effects. This taping technique can be used in any phase of your treatment plan, that is acute, sub-acute, rehabilitative or chronic, and it helps to decrease the incidence of re-injury. It also helps the body to gain back its homeostasis. This taping technique was developed by Dr. Kase in the year 1979 (Naheed et al., 2006). The studies suggested that kinesiointaping helps in the improvement of range of motion as well as in the disability of the shoulder. It reduces the pain when utilized to treat the musculoskeletal disorders (Richard et al., 2010). Specifically, the range of motion of the cervical spine was improved by the use of kinesiointaping (Rodríguez-Fuentes et al., 2016). When managing the musculoskeletal injuries, and the surroundings of the neck are concerned, the pain of the patients was reduced by the use of kinesiointaping (Selva et al., 2019).

Regarding the use of the Kinesio tape, it was suggested that kinesiology taping application that is been used is highly valid and reliable. Also it suggested that the color does not matter, and all the tapes produces the same result and supports longitudinal stretch when applied. Moreover, it suggested that sizes of the tape used can vary according to the dimensions of the body it is been applied (Tantawy et al., 2016). Kinesio tape decreased the quality of pain when the pain is non-specific, however when kinesio tape is applied post injury, there is not much reduction of pain. This reduction of pain is also dependent upon the extent of injury that is being caused (Ylinen, 2007).

Therefore, it was necessary to rule out the effects that are brought to sternocleidomastoid muscle by the application of kinesiotaping. The sternocleidomastoid muscles play a major role in causing the non-specific neck pain. It is the part of neck anatomy and contributes for its motion. As Kinesio taping method is beneficial in reducing the pain, so the muscle was studied with application of Kinesio tape to know the benefits rendered.

MATERIALS & METHODS

In this study, 40 Individuals were selected. The individuals/students were selected from Karachi University and NED University, as the complaint of mechanical neck pain is common among students. The duration of the study was 6 months from June 2018 to December 2018. Participants that reported the occurrence of neck pain in the past 6 months were included in the study. A screening questionnaire was distributed among the participants and those individuals that report any progressive neurological deficit, recent trauma, unplanned weight loss, fever or chills, any spinal conditions or pathology or taking any medications were excluded from the study. The target muscle was sternocleidomastoid muscle. For the sternocleidomastoid muscle a Y shaped Kinesio-tape was used with width 2.5cm, length 18 cm and the Y cut: 12 cm. Measure the distance from the mastoid process to the sternoclavicular joint. Patient position was seated. Apply the base of the Kinesio-tape to the mastoid process. Laterally flex the neck to the opposite side then apply the lateral Y tail to the medial 1/3 of the clavicle. Rotate the head to the same side while maintaining lateral flexion to the opposite side. Apply the medial Y tail to the sternal notch. The study was continued for 3.5 weeks. 10 sessions of taping were given every second day. The intensity of pain was measured by using the Numeric Rating Scale (NRS) on 1st day and the last day of treatment. Also, the Neck Disability Index (NDI) was used to find out what level of disability is caused by the neck pain. NDI was also measured on the 1st day and last day of treatment. Descriptive statistics and paired t-test was used to analyze the data recorded.

RESULTS & DISCUSSION

Among the participants 55% of them were males while 45% of the participants were females. The mean age of the participants came out to be 22.55 with the standard deviations ± 1.09 years.

Table-1. Baseline Characteristics of Studied Samples (n=40)

Variables	Kinesio Taping (KT)		
	n=40		%
Age Group	20 - 22 Years	18	45.0
	23 - 25 Years	22	55.0
Gender	Male	22	55.0
	Female	18	45.0

The pain score was also checked among the participants on NRS. Before the treatment the pain score was 6.50 standard deviation 1.53, while after the treatment it was 2.10 standard deviation 1.11. The mean decrease in both the pains was on average 4.40 units with significant p value less than 0.01. Next the NDI score was compared. Before the treatment the NDI score was 53.20 with the standard deviation 15.32, while after the treatment the NDI score was 17.70 with standard deviation 9.82. The decrease in the mean of the NDI was 35.50 units with a significant p- values less than 0.01.

Table- 2. Comparison of NDI Score among KT Group (n=40)

Variables	Mean	SD	Mean Difference	t-value	p-value
Pre-test NDI (%)	53.2	15.3	35.50	18.3	<.01*
Post-test NDI (%)	17.7	9.8			

*p<0.05 was considered significant using Paired Sample t-test

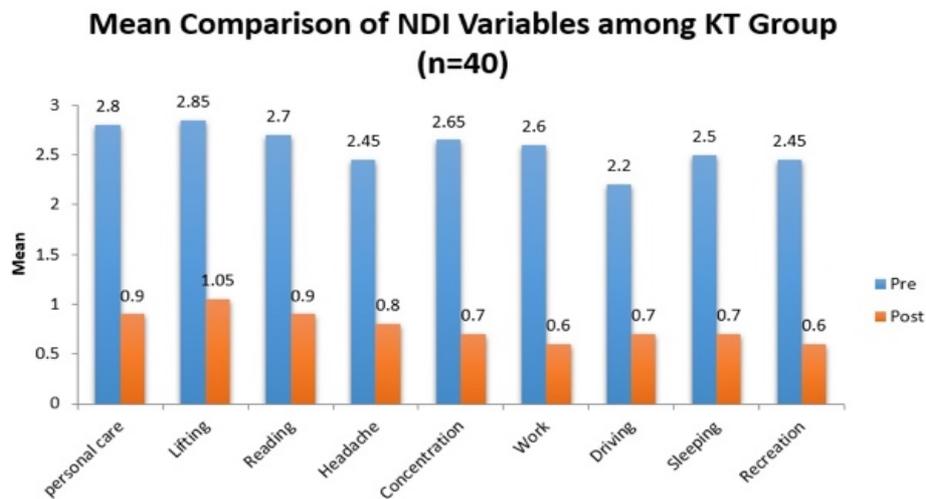


Figure 1: Comparison of NDI variables among KT Group

In the present study there was significant improvement in pain and the function also among the subjects who were suffering from mechanical or non-specific neck pain. Kinesio taping rendered positive results by improving the score of Neck disability index as well as VAS scale. There have been different techniques that served for the effectiveness of neck pain, like general neck exercise or stabilization exercises, and Kinesio taping is an addition to it, that it is also a less effort exerting maneuver to help individuals suffering from neck pain.

Therefore, the application of kinesiotaping can be added to different exercise regimes in order to get better results. The occupation of the subjects that were part of this study were student with their age in between 20 – 25 years as the complain of neck pain is extremely prevalent among the students. Studies had stated that because the students of the university spent hours in studying, and during their process of studying the use of laptops and long static positions of sitting can make them vulnerable and they can easily be a victim of non-specific neck pain. Studying in the same posture and poor knowledge of ergonomics make their posture slouched, eventually leading to the occurrence of mechanical neck pain (Ylinen, 2007).

CONCLUSION

Neck pain has always been an economical burden. It is noted that the associated factors which neck pain brings are usually the ones due to which the individual is unable to attend his or her work. Usually the individuals suffering from neck pain uses muscle relaxants, analgesics, and exercises to get rid of their pain. Kinesio taping here is a non-invasive method that will limit the use of these muscle relaxants and analgesics and also provide comfort and reduce the intensity as well as frequency of non-specific neck pain.

Conflict of interest

Authors declare that there is no conflict of interest.

Ethical approval

Ethical approval was taken from Institutional Ethical Review Board (IERC) of Isra Institute of Rehabilitation Sciences, Isra University, Karachi Campus.

Consent for Publication

All authors approved manuscript for publication.

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