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Effectiveness of taping on neck pain and neck disability index in tailors– An experimental study

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Abstract
Background: The musculoskeletal discomfort mainly due to two reasons, i.e the harmful working condition and posture demands of the work place leading to musculoskeletal problems. The risk of developing musculoskeletal problems is mainly due to the inconvenient work posture [4]. The work related musculoskeletal disorder primarily caused by repetitive movements, poor posture, continuous static work, frequent bending [4]. Because poor posture the body is distress resulting decreased efficiency of performance work because they work in sitting posture for long periods with shoulders flexed and abducted, head and trunk flexed forward [2]. when work related musculoskeletal disorder developed in the tailors, then they experienced the pain, stiffness and loss of rom and inability to work ADL [5]. Majority of the tailors felt pain in neck, shoulders, thighs and legs as they are exposed to high level of repetitive task and work pressure.[5]Musculoskeletal complaints regarding neck region are extensively present in tailor [2]. as this profession involves highly monotonous, repetitive work in sitting position with bent neck [2].
Kinesiology tape- it is improved version of elastic tape that acts to dynamically assist your muscle function. K-taping application affects muscular and myofascial function which help in reducing the tension over the muscles. [13] application of tape lifts the skin and directly reduces pressure on subcutaneous nociceptors [13], also the tape alter the afferent sensory signals, which would lead to the facilitation of pain inhibitory mechanisms, causing a reduction in pain.[11]
Objective: To Find Effectiveness of Taping On Neck Pain And Neck Disability Index In Tailors – An Experimental Study.
Methodology: Ethical clearance was obtained from institution informed consent was taken from participants. Participants were screened according to inclusion and exclusion criteria. Purpose of study and procedure was explained to participants. The subjects were assessed for neck pain by using NPRS and NDI. Kinesio tape was applied to subjects in sitting position. Subjects were reassessed after 48 hours for neck pain by using NPRS and NDI.
Result: Total 40 tailors were assessed for neck pain by using NPRS and NDI. Statistical analysis is done by using paired t test.
Conclusion: The study concludes that the application of kinesio tape shows significant effect on reducing neck pain and disability in tailors.

Keywords: Kinesio taping, neck pain, tailors, NPRS, NDI

Introduction

Work related musculoskeletal disorders are a group of painful disorders due to repeated basis overuse for days, months or years and those effects bones, muscles, joints, ligaments, tendons, nerves, bursa and blood vessels are stressed and traumatized and those body tissues ultimately become damaged [4].

The musculoskeletal discomfort mainly due to two reasons, i.e the harmful working condition and posture demands of the work place leading to musculoskeletal problems. The risk of developing musculoskeletal problems is mainly due to the inconvenient work posture. [4] The work related musculoskeletal disorder primarily caused by repetitive movements, poor posture, continuous static work, frequent bending [4].

Because poor posture the body is distress resulting decreased efficiency of performance work because they work in sitting posture for long periods with shoulders flexed and abducted, head and trunk flexed forward [2]. When Work related musculoskeletal disorder developed in the tailors, then they experienced the pain, stiffness and loss of ROM and inability to work ADLs [5].

Majority of the tailors felt pain in neck, shoulders, thighs and legs as they are exposed to high level of repetitive task and work pressure [5]. Musculoskeletal complaints regarding neck region are extensively present in tailor [2]. As this profession involves highly monotonous, repetitive work in sitting position with bent neck [2].
Prolonged working extent, and working with bend neck, these are all the risk factors causing neck pain in workers [5]. In many studies they shown some prevalence in tailor that most affected site is neck (41.8%) followed by lower back (31.8%), upper back (28.2%), shoulder (16.4%), hand/wrist/fingers (12.7%), Knee (12.7%) [2].

Materials and Methodology

1. Study Design – Experimental study
2. Place and source of study – physiotherapy clinics and in tailor shop.
3. Study population – tailors.
4. Sampling Method - convenient sampling
5. Samples size -40
6. Duration of study – 6 months.
7. Treatment duration – 48 hr
8. Tools and materials – Pen , paper , NPRS and NDI scales , k – tape
9. Consent form.

Inclusion Criteria

1. On NPRS 5 and above
2. Subject of age between 25 to 45. With experience of tailoring since 5years
3. subjects willing to participate in the study
4. Neck pain more than last 6 month.
5. NDI -15 to 24 points above (moderate disability)
6. Working Hour- 8hr
7. Both female and male
8. Subject who are not undergoing any other medical treatment for neck pain.

Exclusion Criteria

1. Subject who are not willing to participate in the study
2. Those who have any known spinal disorder.
3. Congenital deformities of spine and upper, lower extremities
4. Those who can not obey commands.
5. People with known pathology of bone or any other disease
6. Existing wound or skin allergies around neck region.
7. Pregnant females, females in postpartum till 8months.

Procedure

- Ethical clearance was obtained from institution.
- Informed consent was taken from the participant.
- Subject were selected according to inclusion and exclusion criteria.
- The study was explained to the participants.
- The subjects were assessed for neck pain by using NPRS and NDI.
- Kinesio tape was applied to subjects in sitting position.
- Subjects were reassessed after 48 hours for neck pain by using NPRS and NDI.

Outcome Measure

1. Numerical pain rating scale
   The patient is asked to rate her pain from 0 (no pain) to 10 (most severe pain)
2. Neck disability index
   Patient is asked to mark in each section only the one box that applies you.

Discussion

The aim of this study was to see the effectiveness of taping on neck pain in tailors.
Prolonged working duration, working with bent neck, these are all the factors causing neck pain in tailors [5]. Saha *et al*. found that the prevalence of MSD among tailors were 78.5% neck was the commonest site of involvement [2]. From our study we found that, mostly affected age group was 25 to 31years of age. Tailoring involves monotonous, highly repetitive task and all the working activities are performed in sitting position [2].
Various studies found that, kinesio taping seems to serve the palliative role. When used in conjunction with rehabilitation to facilitate active movement. By which recovery may be enhanced [10, 12]. K- taping application affects Muscular and myofascial function which help in reducing the tension over the muscles and helps in maintaining functional ability so NDI scores were reduced [13].

The application of tape alter the afferent sensory signals, which would lead to the facilitation of pain inhibitory mechanisms, causing a reduction in pain, which is known as the gate control theory [11] one of the theories is that KT application lifts the skin and directly reduces pressure on subcutaneous nociceptors [13].
In one study performed on surgeons, the most effective reduction in neck pain of surgeons was observed on the second day of application of K-taping, also NDI score were significantly reduced, and the cervical ranges were improved, study also concluded that K taping have some psychological effects [14].

Result
The comparison of pre and post NPRS score after application of taping found that the p value is <0.0001 which is considered extremely significant. The pre-treatment mean was 6.23 with SD of 1.17 while post-treatment mean was 5.20 with SD of 1.32. The T value was 7.2741.
The comparison of pre and post NDI score after application of taping found that the p value is <0.0001 which considered extremely significant. The pre-treatment mean was 19.55 with SD of 4.52while post-treatment mean was 15.38 with SD of 5.04 . The T value was 8.8424.

Conclusion
The study concludes that the application of kinesio tape shows significant effect on reducing neck pain and disability in tailors after 48 hr.

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