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The Immediate Effects of Kinesio Taping Versus Thoracic Manipulation in Subjects with Mechanical Neck Pain: A Pilot Study

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Introduction

BACKGROUND
• Recent evidence has reported increased cervical ROM and reduced pain immediately after thoracic spine manipulation (TSM) in patients with mechanical neck pain (MNP).
• Kinesio Tape (KT) is another intervention used clinically in the management of patients with MNP.
• It’s hypothesized that KT may exert its effects by (1) increasing local circulation, (2) reducing local edema, (3) providing proprioceptive stimulus, (4) providing afferent input to the central nervous system, or (5) limiting range of motion.
• Although physical therapists use KT in clinical practice, there is limited scientific evidence of its effectiveness.

PURPOSE
• To compare the short-term effects of thoracic spine manipulation and exercise (TSM-EX) to that of cervical spine Kinesio Tape and exercise (KT-EX) on pain, disability, rating of change, and range of motion among subjects with MNP.

Methods

SUBJECTS:
• Recruited through flyers posted in Tacoma, WA.
• Inclusion criteria: neck pain exacerbated with movement, ages 18-40 years of age, English speaking.
• Exclusion criteria: symptoms suggestive of non-mechanical etiologies, balance or coordination problems, morning stiffness lasting greater than one hour, history of whiplash injury, spinal etiologies, balance or coordination problems, morning stiffness.

STUDY PROTOCOL:
• Subject were randomized into 1 of 3 treatment groups: Exercise (EX) alone; TSM-EX; or KT-EX.
• 3 treatment sessions over two week period.

Manipulation protocol: Figure 1

Taping protocol: Figure 2

Exercise protocol: Figure 3

Results

OUTCOME MEASURES
• The GRC (Global Rating of Change), NPRS (Numeric Pain Rating Scale) and NDI (Neck Disability Index) were used as outcome measures at each visit. Cervical Active Range of Motion (AROM) was taken before and after treatment.

RESULTS DESCRIPTION
• The TSM-EX group showed a trend of decreased NDI and NPRS scores each week. (Tables 1 and 2)
• The KT-EX group showed a trend of decreased NDI and NPRS score each week. (Tables 1 and 2)
• The EX group showed a decrease in NDI and NPRS scores between baseline and week 1; no conclusion can be made for week 2 due to participant injury during study. (Tables 1 and 2)
• All groups showed improvement in symptoms on GRC all weeks except week 2 for the EX group, which on average remained the same. (Table 3)

Discussion

CLINICAL IMPLICATIONS
• Both KT-EX and TSM-EX groups demonstrated decreased symptoms related to MNP compared to EX group.
• Both KT-EX and TSM-EX groups demonstrated superior results in all outcome measures compared to EX group.

SUGGESTIONS FOR FUTURE RESEARCH
• Perform follow-up study with repeated protocol and larger group of participants for increased power.

LIMITATIONS
• Decreased power due to low number of participants.
• Unequal group size due to pre-randomization.

• This pilot study demonstrates the need to further investigate the effects of KT-EX compared to TSM-EX in patients with MNP.
• More high-quality studies and replication of this pilot study are needed to further substantiate this trend.

REFERENCES

Table 1: NDI Scores
Table 2: NPRS Scores
Table 3: GRC Scores