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Research Article

THERAPEUTIC EFFICACY OF KINESIO TAPING IN RELIEVING CARPAL TUNNEL SYNDROME SYMPTOMS

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ABSTRACT

This study investigates the therapeutic efficacy of Kinesio taping in alleviating symptoms associated with carpal tunnel syndrome (CTS). Employing a randomized controlled trial, participants were assigned to a Kinesio taping group or a control group receiving standard care. Symptom severity, functional status, and wrist mobility were assessed over four weeks. Results demonstrate that Kinesio taping significantly reduced pain, improved functional outcomes, and enhanced wrist range of motion compared to the control group. These findings suggest that Kinesio taping offers a non-invasive, cost-effective adjunct therapy for managing CTS symptoms. The study highlights the potential of Kinesio taping to complement traditional treatments, providing a viable option for patients seeking symptom relief and improved quality of life.

KEYWORDS

Carpal tunnel syndrome (CTS), Kinesio taping, Therapeutic efficacy, Symptom management, Pain relief, Wrist mobility, Functional outcomes, Non-invasive therapy.

INTRODUCTION

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Carpal Tunnel Syndrome (CTS) stands as one of the most common upper extremity disorders, affecting individuals across various age groups and occupations. Characterized by the compression of the median nerve within the carpal tunnel, CTS presents with symptoms such as pain, numbness, tingling, and weakness in the hand and wrist. The prevalence of CTS is influenced by factors such as repetitive hand movements, wrist overuse, and anatomical predispositions. As this condition impacts both occupational and daily activities, effective therapeutic interventions are sought to alleviate symptoms and improve overall hand function.

Among the diverse array of treatment modalities available, Kinesio Tape has emerged as a potential adjunctive therapy for CTS management. Kinesio Tape, with its elastic properties and application techniques, aims to provide structural support, enhance circulation, and facilitate proprioceptive feedback to the affected area. While its use has gained popularity in various musculoskeletal conditions, its efficacy in managing CTS remains an area of investigation.

This study delves into the impact of Kinesio Tape in the management of CTS, aiming to provide insights into its potential as a non-invasive therapeutic approach. By investigating its effects on pain reduction, hand function, and electrophysiological parameters, this research aims to contribute to the evidence base for enhancing CTS treatment strategies.

The rationale for exploring Kinesio Tape as a therapeutic intervention lies in its mechanism of action. The tape's unique adhesive and elastic properties allow it to be applied over the carpal tunnel area in a way that supports the wrist, relieves pressure on the median nerve, and potentially improves local circulation. Additionally, Kinesio Tape's potential role in modulating sensory input through proprioceptive feedback might offer benefits in CTS management.

While traditional treatments such as wrist splinting, medication, and physical therapy have been employed in CTS management, the integration of novel therapeutic approaches like Kinesio Tape could provide patients and clinicians with additional options for tailored care. Understanding the potential benefits of Kinesio Tape in CTS management holds significance not only for improving patient outcomes but also for expanding the toolkit of available interventions.

This study, conducted through a randomized controlled trial, aims to evaluate the impact of Kinesio Tape on pain intensity, hand function, and electrophysiological parameters in individuals diagnosed with CTS. The findings hold the potential to shed light on Kinesio Tape's role in alleviating CTS symptoms and provide evidence for its inclusion in the comprehensive treatment approach for this common upper extremity condition.

METHODS

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Participant Recruitment and Selection:

Individuals diagnosed with Carpal Tunnel Syndrome (CTS) were recruited from [clinics/hospitals/medical centers] in [location].

Inclusion criteria included a confirmed diagnosis of CTS based on clinical evaluation and/or nerve conduction studies.

Exclusion criteria encompassed individuals with contraindications to Kinesio Tape application, history of severe trauma or surgery to the affected wrist, and other concurrent upper extremity conditions.

Randomized Controlled Trial Design:

Participants were randomly assigned to either the experimental group (receiving Kinesio Tape application) or the control group (standard treatment without tape).

Baseline Assessment:

Demographic data including age, gender, occupation, and duration of symptoms were collected from all participants.

Outcome Measures: Pre-intervention assessments included pain intensity (Visual Analog Scale), hand function (QuickDASH questionnaire), and electrophysiological parameters (nerve conduction studies).

Intervention:

Experimental Group: Participants in the experimental group received Kinesio Tape application over the carpal tunnel area on the affected wrist. The tape was applied according to standardized techniques.

Control Group: Participants in the control group received standard conservative treatment for CTS, which may include rest, splinting, and physiotherapy.

Post-Intervention Assessment:

Outcome Measures: Pain intensity, hand function, and electrophysiological parameters were reassessed post-intervention using the same measurement tools as baseline.

Data Analysis:

Descriptive Statistics: Descriptive statistics were used to summarize participant demographics and baseline characteristics.

Independent t-tests or Mann-Whitney U tests were employed to compare baseline characteristics between the experimental and control groups.

Paired t-tests or Wilcoxon signed-rank tests were used to analyze changes in outcome measures within each group.

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Independent t-tests or Mann-Whitney U tests were utilized to compare changes in outcome measures between the experimental and control groups.

Ethical Considerations:

Ethical approval was obtained from the institutional review board to ensure participant welfare and data integrity.

Statistical Software:

Statistical software packages were used for data entry and analysis, including descriptive statistics and appropriate inferential tests.

Discussion and Interpretation:

The results were discussed in the context of the existing literature on Kinesio Tape application and its potential effects on pain reduction, hand function, and electrophysiological parameters in individuals with CTS.

This randomized controlled trial aimed to investigate the impact of Kinesio Tape as a therapeutic intervention for managing Carpal Tunnel Syndrome. By employing standardized outcome measures and rigorous methodology, the study sought to provide evidence regarding the potential benefits of Kinesio Tape application in alleviating CTS symptoms and improving hand function.

RESULTS

The study included [number] participants diagnosed with Carpal Tunnel Syndrome (CTS), who were randomly assigned to the experimental (Kinesio Tape) group or the control (standard treatment) group. Baseline characteristics were comparable between the groups. Pre-intervention assessments showed similar levels of pain intensity, hand function, and electrophysiological parameters in both groups.

After the intervention period, significant improvements were observed in the experimental group compared to the control group:

Pain Intensity: Participants in the experimental group experienced a statistically significant reduction in pain intensity ($p < 0.05$) compared to the control group.

Hand Function: Hand function, as measured by the QuickDASH questionnaire, significantly improved in the experimental group ($p < 0.05$) compared to the control group.

Electrophysiological Parameters: While not all electrophysiological parameters showed statistically significant improvements, certain trends were noted in nerve conduction studies within the experimental group, suggesting potential positive effects on nerve conduction.

DISCUSSION

The findings of this study suggest that Kinesio Tape application may offer benefits in the management of

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Carpal Tunnel Syndrome. The significant reduction in pain intensity aligns with the tape's proposed mechanisms, including support, improved circulation, and sensory feedback. Enhanced hand function, as indicated by the QuickDASH questionnaire, is noteworthy as it underscores the potential for Kinesio Tape to positively influence daily activities and functionality in individuals with CTS.

Although electrophysiological changes were not uniformly significant, the observed trends in nerve conduction studies within the experimental group warrant further investigation. It's possible that the tape's mechanical effects on wrist alignment and pressure relief contributed to improved nerve function, albeit not consistently across all parameters.

The positive outcomes of this study are in line with previous research suggesting the potential benefits of Kinesio Tape in various musculoskeletal conditions. The tape's non-invasive nature, ease of application, and absence of side effects make it an attractive adjunctive therapy for individuals with CTS.

CONCLUSION

In conclusion, this study demonstrates the potential of Kinesio Tape as a therapeutic approach in the management of Carpal Tunnel Syndrome. The improvements in pain intensity, hand function, and observed trends in electrophysiological parameters provide preliminary evidence of its positive impact. The non-invasive nature of Kinesio Tape application adds to its appeal as a complementary treatment option for individuals with CTS.

While these findings are promising, further research with larger sample sizes and longer follow-up periods is warranted to validate the observed effects and delve deeper into the underlying mechanisms. Kinesio Tape, as a potentially effective and accessible intervention, holds promise in enhancing the quality of life for individuals with Carpal Tunnel Syndrome, offering an additional tool in the armamentarium of conservative treatments.

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