

Effect of Strain & Counter Strain Technique in Addition to Surge Faradic Stimulation in Subjects with Trapezitis

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Abstract: Title: Effect of Strain & Counter-Strain Technique in addition to Surge faradic Stimulation in Patients with trapezitis Background: Trapezitis is musculoskeletal condition in which inflammation of trapezius muscle is commonly seen as a result of faulty posture, overuse stressful neck movement and ultimately leads to neck- shoulder pain. The effect on the musculoskeletal properties is due to surging of faradic current as it increases the blood circulation to the muscle and also enhances the contractile property of the muscle and also Strain and Counter- strain technique or positional release technique is a passive positional intervention aimed at relieving musculoskeletal pain and dysfunction. Aim: To study effect in Pain, Functional Disability and ROM after Strain and Counter-Strain technique along with Surge Faradic Stimulation in trapezitis patients. Methodology: 44 Subjects were selected on the basis of inclusion and exclusion criteria. They were randomly allotted with 1:1 to either group A or B, both groups received intervention for 6 days/week. NPRS, NDI & Universal Goniometer were taken to measure Pain, Functional disability and Range of motion. Statistical analysis & Results: Statistical Analysis was done Using SPSS Software within Group with Surge Faradic Stimulation the Data for Pain, functional disability & Range of Motion shows Highly significant (P Value <0.0001) difference. In Subjects with SF+SCS Data showed Highly Significance (p value <0.0001) for pain, Functional Disability & Range of motion. Study showed that comparison Between Group was (P value <0.0001) also showed Highly Significant result in improving cervical ranges expect flexion and extension and also functional disability. Conclusion: The study concludes that Surge Faradic Stimulation and Add on effect of Strain and Counter strain Study is Helpful in reducing Pain & Range of Motion in within group but Cervical flexion and extension ROM with functional disability of Neck does not showed the significant result thus there is add on effect of Strain & Counter-but Technique on Trapezitis patient but there no effect in improving functional disability and flexion & extension ROM in between groups of trapezitis patients.

Keywords: Trapezitis, Pain, Strain & Counter-strain, Surge faradic Stimulation

1. Introduction

Neck pain is very commonly found in population worldwide. Neck pain is very commonly found in population worldwide. Neck pain is generally associated with poor biomechanical health status, musculoskeletal conditions, previous neck injury & psychological distress it is also associated with occupational load and obesity⁽¹⁾ neck pain also comprises of the other neurological functions as it consist central nervous system which leads to the chronic neck pain.⁽²⁾ The term Trapezitis is defined as the inflammation of Trapezius muscle.⁽³⁾ The scapula is connected the shoulder joint and helps to perform various movements of shoulder, scapula and neck.⁽⁴⁾ The prevalence of neck pain is more in female as compared to the man.⁽⁵⁾ The upper back region of the human body and which is divided into 3 fibres upper trapezius, middle trapezius and lower trapezius muscle.⁽⁶⁾ The pathway of the headache can be throbbing, bilateral travelling from head and forehead region.⁽⁷⁾ The hyperirritable sites are mainly found on the upper and middle trapezius muscle because it is the postural muscle and prone to get affected.⁽⁸⁾ The percentage of acquiring the trigger points in female is 54% where as the percentage of acquiring in males is 45%. The most common age which is affected with myofascial trigger points are 27.0 and 50 years and the inactive individuals.⁽⁹⁾ The Surge Faradic stimulation it prevents the adhesion formation in the muscle which can result obstruction of the blood flow to

each muscle fibres. And as correspondences organisation of the lymph nodes within the tissue is done. According to the previous evidences the Surge Faradic stimulation has 50% to 100% therapeutic effect on the Trapezitis.⁽¹⁰⁾ Bailey and Dick proposed a hypothesis that the tissue damage in dysfunctional muscles can be reduced by positional release mechanism which is utilised by strain & counter-strain technique. The evidence suggests that the damaged structures are kept in a ease by placing in proper position which leads to the perfusion of the fluids such as blood and lymph. Helps in removal of waste products such as sensitizing inflammatory mediators.⁽¹¹⁾ The surge faradic current is mainly used for the therapeutic uses to treat trapezius spasm. The positional release technique is also known as the strain & counter-strain technique. In this technique the restrictive obstacles are positioned in ease in the treatment of musculoskeletal dysfunctions.

2. Materials and Methodology

Study site: Matrushree Davalbaa Ayurvedic Hospital (Physiotherapy OPD), Vadodara, Yogini hospital, Vadodara, GMERS Hospital, Gotri, Vadodara

Study design: Interventional Comparative Study duration: 10-12 months after ethical approval study population: Trapezitis patients

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Inclusion Criteria⁽⁸⁾: Male and female,18-35 years of age, Pain over trapezius

Exclusion Criteria⁽⁹⁾: History of referred pain in upper extremity, Fracture around shoulder and neck region Shoulder pathology. Hypersensitive skin.

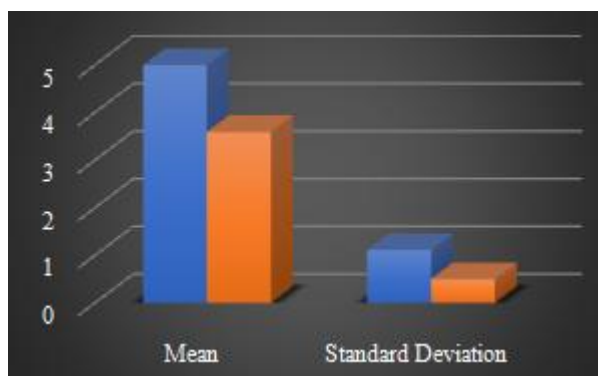
3. Result

The total 44 subjects with Trapezititis were recruited for the present study. As per inclusion criteria all of them had Trapezititis and were selected. They were randomly divided into two groups: Paired t test was done to find out the pain intensity effect of Surge Faradic stimulation through NPRS scale. Pre and post Mean ± SD were (6.09 ± 1.06) and (5 ± 1.11) respectively. The t value for group A is 7.48. Table shows reduction in Pain intensity by Mean improvement of NPRS Score with Group A.

Paired t test was done to find out the pain intensity effect of SF + SCS through NPRS scale. Pre and post Mean ± SD were (4.90 ± 0.68) and (3.59 ± 0.50) respectively. The t value for group A is -7.28. Table-4.4 shows reduction in Pain intensity by Mean improvement of NPRS Score with Group A

Group A and Group B, in each group 22 patients. Treatment was given for 6 days for one week. Shows Post NPRS value in Group A and B. The independent t value for the post-test variables for both groups is -5.43 the result was found to be significant in both Groups.

NPRS	Mean	Standard Deviation	T value	P-value
Post- intervention	5	1.11	-5.43	<0.001
Post- intervention	3.59	0.50		

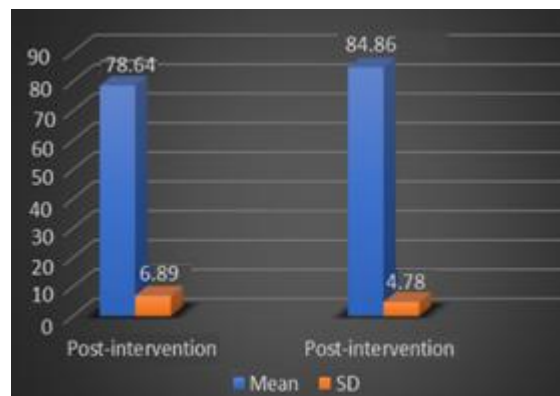


Paired t test was used to find out improvement in Cervical Range of Motion. Flexion Pre and Post treatment in Group A (SF) pre and post mean ± SD were (81.22 ± 5.67) and (84.45 ± 4.73) respectively. The t value for Group A is 2.052. Table- 4.6 shows improvement in ROM value by showing difference in Mean Pre and Post treatment in Group-A.

Paired t test was used to find out improvement in Cervical Range of Motion: Flexion Pre and Post treatment in Group B (SF) pre and post mean ± SD were (78.64 ± 6.89) and (84.86 ± 4.78) respectively. The t value for Group B is 3.479. Table-4.7 shows improvement in ROM value by showing difference in Mean Pre and Post treatment in Group-B

Table shows Post Cervical ROM: flexion value in Group A and B. The independent t value for the Post-test variables for both the groups is 0.572 the result was found to be not significant when both the groups were compared.

Cervical ROM	Mean	SD	T value	P value
Post-intervention	78.64	6.89	0.572	0.5704
Post-intervention	84.86	4.78		

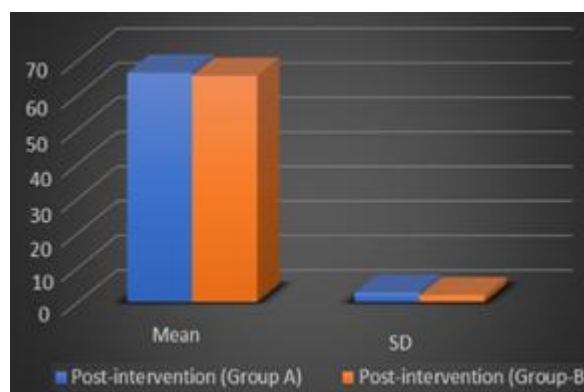


Paired t test was used to find out improvement in Cervical Range of Motion: Extension Pre and Post treatment in Group A (SF) pre and post mean ± SD were (64.13 ± 3.28) and (66.40 ± 2.73) respectively. The t value for Group A is 2.495. Table-4.9 shows improvement in ROM value by showing difference in Mean Pre and Post treatment in Group-A

Paired t test was used to find out improvement in Cervical Range of Motion: Extension Pre and Post treatment in Group B (SF + SCS) pre and post mean ± SD were (61.09 ± 2.34) and (65.5 ± 1.89) respectively. The t value for Group B is 6.877. Table-4.10 shows improvement in ROM value by showing difference in Mean Pre and Post treatment in Group-B

Table shows Post Cervical ROM: Extension value in Group A and B. The independent t value for the Post test variables for both the groups is -1.271 the result was found to be significant in both the group.

Cervical ROM	Mean	SD	T value	P value
Post-intervention	66.40	2.73	-1.271	0.2106
Post-intervention	65.5	1.89		



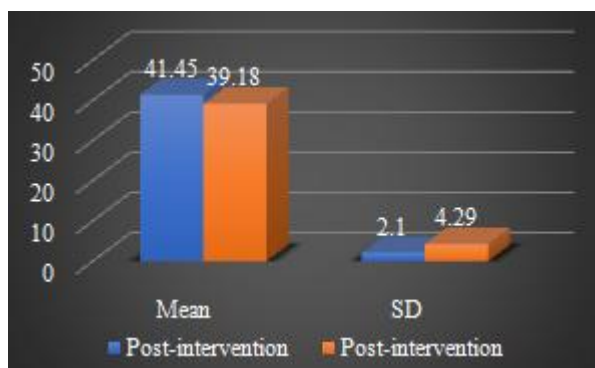
Paired t test was used to find out improvement in Cervical Range of Motion: Side Flexion (Rt) Pre and Post treatment

in Group A (SF) pre and post mean \pm SD were (36.22 \pm 2.40) and (41.45 \pm 2.10) respectively. The t value for Group A is. Table-4.12 shows improvement in ROM value by showing difference in Mean Pre and Post treatment in Group-B

Paired t test was used to find out improvement in Cervical Range of Motion: Flexion Pre and Post treatment in Group B (SF) pre and post mean \pm SD were (37.36 \pm 4.66) and (39.18 \pm 4.29) respectively. The t value for Group B is 1.348. Table-4.13 shows improvement in ROM value by showing difference in Mean Pre and Post treatment in Group-B

Table shows Post Cervical ROM: Side flexion (Rt) value in Group A and B. The independent t value for the Post test variables for both the groups is -2.229 the result was found to be significant in both the group.

Cervical ROM	Mean	SD	T value	P value
Post-intervention	41.45	2.10	-2.229	0.0312
Post-intervention	39.18	4.29		

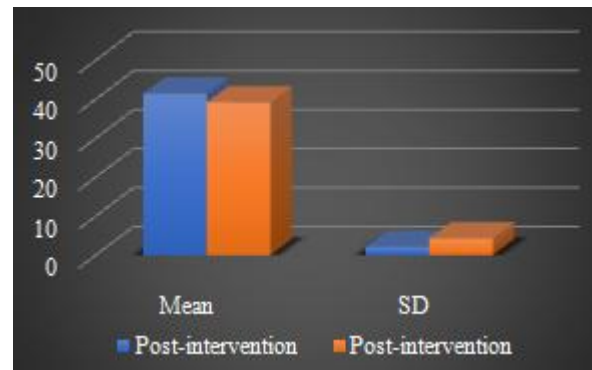


Paired t test was used to find out improvement in Cervical Range of Motion: Side Flexion (Lt) Pre and Post treatment in Group A (SF) pre and post mean \pm SD were (35.31 \pm 2.31) and (41 \pm 3.72) respectively. The t value for Group B is 6.095. Table-4.15 shows improvement in ROM value by showing difference in Mean Pre and Post treatment in Group-A

Paired t test was used to find out improvement in Cervical Range of Motion: Side Flexion (Lt) Pre and Post treatment in Group B (SF + SCS) pre and post mean \pm SD were (35.04 \pm 3.15) and (37.81 \pm 3.58) respectively. The t value for Group B is 2.591. Table-6 shows improvement in ROM value by showing difference in Mean Pre and Post treatment in Group-B

Table shows Post Cervical ROM: Side flexion (Lt) value in Group A and B. The independent t value for the Post test variables for both the groups is the result was found to be significant in both the group, but mean improvement was found more in group- as compared to Group

Cervical ROM	Mean	SD	T value	P value
Post-intervention	41.45	2.10	-2.22	0.0312
Post-intervention	39.18	4.29		

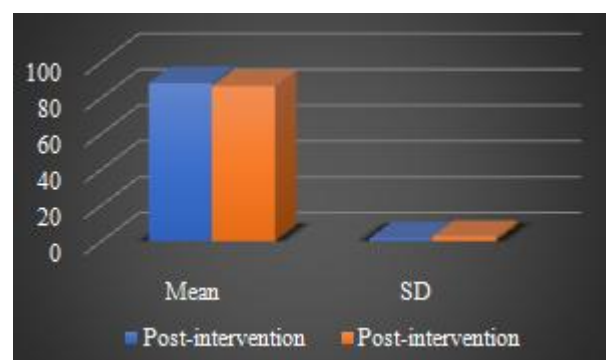


Paired t test was used to find out improvement in Cervical Range of Motion: Rotation (Rt) Pre and Post treatment in Group A (SF) pre and post mean \pm SD were (81.9 \pm 1.77) and (88.31 \pm 1.52) respectively. The t value for Group A is 12.887. Table-4.18 shows improvement in ROM value by showing difference in Mean Pre and Post treatment in Group-A

Paired t test was used to find out improvement in Cervical Range of Motion: Rotation Pre and Post treatment in Group B (SF + SCS) pre and post mean \pm SD were (84.36 \pm 2.61) and (86.45 \pm 2.50) respectively. The t value for Group B is 2.712. Table-4.19 shows improvement in ROM value by showing difference in Mean Pre and Post treatment in Group-B

Table shows Post Cervical ROM: Rotation (Rt) value in Group A and B. The independent t value for the Post test variables for both the groups is -2.982 the result was found to be significant in both the group.

Cervical ROM	Mean	SD	T value	P value
Post-intervention	88.31	1.52	-2.982	0.0048
Post-intervention	86.45	2.50		



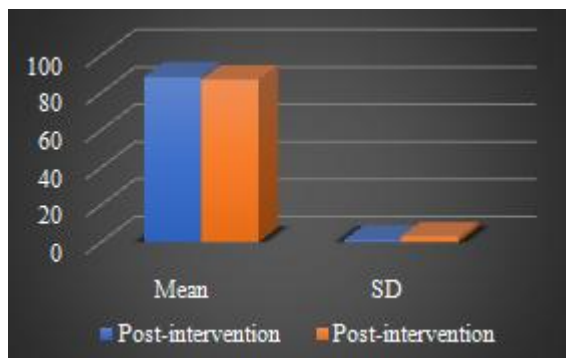
Paired t test was used to find out improvement in Cervical Range of Motion: Rotation(Lt) Pre and Post treatment in Group A (SF) pre and post mean \pm SD were (81.45 \pm 1.26) and (88.5 \pm 1.30) respectively. The t value for Group B is 18.26. Table shows improvement in ROM value by showing difference in Mean Pre and Post treatment in Group-A

Paired t test was used to find out improvement in Cervical Range of Motion: Flexion Pre and Post treatment in Group B (SF + SCS) pre and post mean \pm SD were (84.59 \pm 1.68) and (87.09 \pm 3.00) respectively. The t value for Group B is 3.410. Table-4.22 shows improvement in ROM value by

showing difference in Mean Pre and Post treatment in Group-B

Table shows Post Cervical ROM: Rotation (Rt) value in Group A and B. The independent t value for the Post-test variables for both the groups is -2.023 the result was found to be significant in both the group.

Cervical ROM	Mean	SD	T value	P value
Post-intervention	88.5	1.30	-2.023	0.0495
Post-intervention	87.09	3.00		

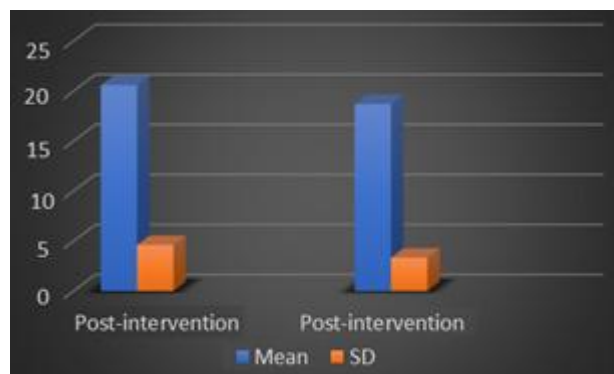


Paired t test was used to find out improvement in Functional Disability of Neck on NDI. Pre and Post treatment in Group A (SF) pre and post mean \pm SD were (23.36 \pm 4.48) and (20.59 \pm 4.60) respectively. The t value for Group A is -2.023. Table shows improvement in ROM value by showing difference in Mean Pre and Post treatment in Group-A

Paired t test was used to find out improvement in Functional Disability of Neck on NDI Pre and Post treatment in Group B (SF+SCS) pre and post mean \pm SD were (22.05 \pm 4.30) and (18.7 \pm 3.33) respectively. The t value for Group B is -2.889. Table-4.25 shows improvement in ROM value by showing difference in Mean Pre and Post treatment in Group-B

Table shows Post Functional Disability of Neck on NDI value in Group A and B. The independent t value for the Post test variables for both the groups is -1.561 the result was found to be significant in both the group.

NDI	Mean	SD	T value	P value
Post-intervention	20.59	4.6	-1.561	0.1260
Post-intervention	18.7	3.33		



4. Discussion

The main objective of the study is to find out effect strain and counter-strain technique along with Surge Faradic stimulation on Pain Functional Disability and cervical mobility in trapezitis patients. In this study 44 patients with trapezitis including 29 female and 15 male patients who had complaints of non-specific pain, spasm and tenderness over trapezius muscle were selected in this study following Random Sampling Method. The subjects were divided in two equal groups, 22 subjects in each group. The subjects in Group A Underwent Surge Faradic Stimulation whereas in Group B received Surge Faradic Stimulation in Addition to Strain and Counter-strain Technique. When both the groups were compared by pain score showed significant difference of 0.0001 and showed that Group B was effective than group A and gave highly significant difference of 0.0001. when both the groups were compared by Goniometer showed significant difference of 0.001 and showed that Group B was not effective than group A and showed no significant difference of P-value of 0.57. When both the groups were compared by Goniometer showed significant difference of 0.0001 and showed that Group B was not effective than group A and showed no significant difference of P-value of 0.21. In within group B shows significant difference of 0.18 which states that there is decrease in cervical side flexion range of motion and treatment is not effective in group B and when both the groups were compared by Goniometer showed significant difference of 0.031 and showed that Group B was effective in group B than group A. In within group B shows significant difference of 0.013 which states that there is increase in cervical side flexion (Lt) range of motion and treatment is effective in group B and when both the groups were compared by Goniometer showed significant difference of 0.031 and showed that Group B was effective in group B than group A. there is increase in cervical rotation (Rt) range of motion and treatment is effective in group B and when both the groups were compared by Goniometer showed significant difference of 0.0048 and showed that treatment was effective in group B than group A. there is increase in cervical rotation (Rt) range of motion and treatment is effective in group B and when both the groups were compared by NDI scale showed significant difference of 0.049 and showed that treatment was effective in group B than group A. Overall results of this study improvement in pain measures after both group treatments, also within groups highly significant result was found. These improvements were seen in individual groups also. Results of all cervical range of motion was seen both the groups treatment showed significant difference but accept cervical flexion and does not give the statistically significant result that is <0.05 . These improvements were seen in individual groups as it gave statistically significant result in all cervical range of motion. The Functional Disability also showed the statistical significant difference in within the groups but not between the groups.

5. Conclusion

The study concludes that the effect of Strain and Counter strain Technique in addition to Surge Faradic Stimulation is effective in reducing Pain and Cervical Range of Motion but it does not have effect in improving Neck Functional

Disability within the Groups. But comparing both the groups has statistically Significant Difference on Pain, All Cervical Range of Motion except Cervical Flexion, and Extension. Whereas there is no statistical difference between the Neck Functional Disability. Hence effect of Surge Faradic stimulation in addition with Strain and Counter-strain Technique is helpful in treating Pain and improving cervical range of motion.

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