



EFFECT OF ALEXANDER TECHNIQUE ALONG WITH THERAGUN IN NECK PAIN AMONG BUS DRIVERS-A RANDOMIZED CONTROL TRIAL.

Physiotherapy

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ABSTRACT

Background: Neck pain is a 'discomfort, ache, or pain'. Bus drivers adopt the posture of driving that leads them to suffer from neck pain (60%-69%) of drivers suffer from it. The Alexander Technique is based on poor posture gives rise to a range of health problems. Theragun aims to help alleviate pain and also increase the range of motion.

Aim And Objectives:

Aim: To determine the Effect of the alexander technique along with the theragun in neck pain patients among bus drivers.

Objectives: To find out the effect of the alexander technique and theragun on neck pain.

To compare the experimental group to the control group.

Method: The study population consisted of thirty participants who had undergone neck pain. The subjects will randomly be allocated into two groups: An Experimental Group (n-15) and A Control Group (n-15). The participants who will allocate to an experimental group will complete forty eight sessions of classic PT for 12 weeks (4 sessions per week) Study setting in OPD, Nootan College of Physiotherapy at Sankalchand Patel University.

Results: The data was analyzed using SPSS version 22.0. The parametric test is used within the group analysis. Greater statistically significant improvement was seen in Group-A (p-value is 0.00) as compared to Group-B.

Conclusions: Alexander technique along with theragun is more effective in relieving neck pain, improving the posture and quality of life of bus drivers.

KEYWORDS

Alexander Technique, Theragun, Neck Pain, Posture, Bus drivers

INTRODUCTION

Neck pain is a 'discomfort, ache, or pain'. It is from the occiput to the third thoracic vertebra and involves the medial borders of both scapulae. neck pain is a type of distress or pain. structures involved in neck pain are:- contractile, non-contractile, and hard components in the neck.¹

The Causes of nonspecific neck pain are postural and mechanical stress.² Main causes of neck pain in drivers are habitual forward head posture during driving, invariable jolting, and driving seat ergonomics.³ Other are:- improper driving postures, injury, and trauma, rhythmic activity, muscle damage, whiplash injury,⁵ rapid excessive workloads of driving, and tension in the muscles of the neck.⁴ Bus drivers adopt the posture of driving that leads them to suffer from neck pain (60%-69%) of drivers suffers from it.⁵ etiology of postural neck pain in the bus drivers is habitual forward head posture.⁶

Such symptoms are seen in the bus drivers like Stiff neck Soreness, difficulty moving the neck, sharp pain in the lower neck, General soreness, Neck pain with mobility deficits, Neck pain with movement coordination impairments, Neck pain with headaches, and Neck pain with radiating pain.⁷

In bus drivers, the Prevalence rate of neck pain is 18.18%.⁸ many risk factors of neck pain is: -individual factor (age, sex, history of neck pain injury^{9,10}, Psychological factor(Mental stress, Anxiety, Depression, Lack of social support^{9,10}, Occupational factor(prolonged sedentary office work hour, high workload demand, inappropriate workstation design)^{11,12}

The Alexander Technique is a different therapy. AT's creator is "Frederick Matthias Alexander". It is based on the poor posture gives rise to a range of health problems.^{13,14}

Frederick Matthias Alexander (1869–1955) developed voice loss during his unamplified performances. After doctors found no physical cause, Alexander reasoned that he was inadvertently damaging himself while speaking. Professor Alexander observed himself in multiple mirrors and saw that he was contracting his posture in preparation for any speech than He assume that a habitual conditioned pattern (of pulling his head backward and downwards)disrupting the normal working of his total postural, breathing, and vocal processes.¹⁴

Alexander performer places a hand (with permission) lightly on the

participant's head, neck, or back to help them become aware of some aspect of their body mechanics also notice and release excess tension from the body. In AT Group activities such as:-tossing and catching were included to create an enjoyable structure for the participants.¹⁵

In 2007 Dr. Jason Wersland had a distressing motorbike accident. he feels constant pain in his body. then he created a makeshift tool to increase blood flow and get rid of tension within the muscles. he had unknowingly made the first Theragun. The Theragun permits people to relieve muscular pain.

TG is a handheld percussive therapy device. TG uses a soft, blunt tip for a deep massage to various muscles throughout the body. Theragun aims to help alleviate pain and also increase the range of motion.^{16,17,18}

Theragun comprises cyclic transition between eccentric and concentric muscle contraction. TG's maximum intensity duration is 6Hz and minimum is 1Hz in the vibration cycle.¹⁹ Theragun improves muscular strength, power development, and also increased flexibility.²⁰

Need Of Study

According to previous research, there is the study of theragun in low back pain but there is no study of alexander technique along with theragun in patients with neck pain among bus drivers so the need of study is the effect of the alexander technique along with the theragun in neck pain patients among bus drivers.

AIM AND OBJECTIVES

AIM:

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Hypothesis

Null Hypothesis

[H₀1]- There is no significant effect of Alexander Technique among bus drivers brings about positive changes in the neck pain.

[H₀2]-There is no significant effect of Theragun among bus drivers

brings about positive changes in the neck pain.

[H₃]- There is no significant effect of Alexander Technique along with Theragun among bus drivers bring about positive changes in neck pain.

Alternative Hypothesis:-

[Ha1]-There is a significant effect of Alexander technique among bus drivers brings about Positive changes in the neck pain.

[Ha2]-There is a significant effect of Theragun among bus drivers brings about positive Changes in the neck pain.

[Ha3]-There is a significant effect of Alexander Technique along with Theragun among Bus drivers bring about positive changes in neck pain.

METHODOLOGY

METHOD

Study design- Randomized control trial

Study setting-

OPD- 5, Sports Department, Nootan College of Physiotherapy, Sankalchand Patel University, Visnagar.

Study technique- Simple Random sampling

Intervention duration- 12 weeks

Criteria For Selection

Inclusion Criteria:

Bus drivers with neck pain with age 30- 40 only included males with NPRS score of more than 4.

Exclusion Criteria:

Subjects with Recent fracture, spine surgery, cervical radiculopathy, cervical spondylosis Fibromyalgia, Current nerve root pain

Procedures of Data Collection

After taking Ethical consideration, we applied for the registration number and the number in this study is CTRI/2021/11/048874. After that, we took the consent of the patients and we give information about the treatment. The patient who attain the inclusion criteria had to go through the evaluation process. The study population consisted of 30 patients who had undergone neck pain. The patients were randomly allocated into two groups by simple random sampling An Experimental Group(n-15) and A Control Group (n-15). The Pre-Assessment of outcome measures NPRS for pain intensity and NDI for evaluation of patient's presence status. The patients who were allocated to an experimental group did complete 48 sessions of treatment for 12 weeks (4 sessions /week) after that we reassessed the patient with NPRS and NDI The patient who were allocated to a control group did not have any treatment by us Duration of treatment: - Alexandar technique: -30 minute/session

Theragun: -10 minute/session

Total duration: - 40 minute/session

NPRS (numerical pain rating scale) and neck pain disability index will be taken for all participants after 12 weeks of the treatment.

Treatment Protocol

Group- A

Group A was treated with Alexander technique 30 minute/session along with the Theragun10 minute/session.

Group- B

No treatment was given by us.



Figure 4.4: Applying Alexander Technique Along With Theragun

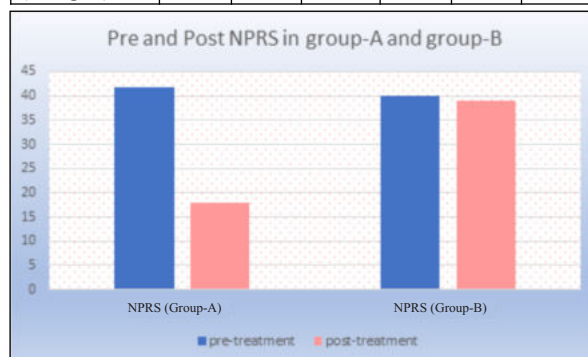
RESULT

Table 5.1: Mean Age Of Patients In Group-A And Group-B

Demographic Details		Group A	Group B
Age	Mean	35.46	35
	SD	± 2.89	± 2.67

Table 5.2: Intergroup Comparison Of PRE And POST-Treatment Of NPRS Score For Group-A And Group-B

Outcome	Pre-Treatment		Post-Treatment		t value	p-value
	Mean	SD	Mean	SD		
NPRS Score (Group-A)	8.26	± 0.70	2.46	± 0.83	0.191	0.00
NPRS Score (Group-B)	8	± 0.75	7.66	± 0.72	0.698	0.019

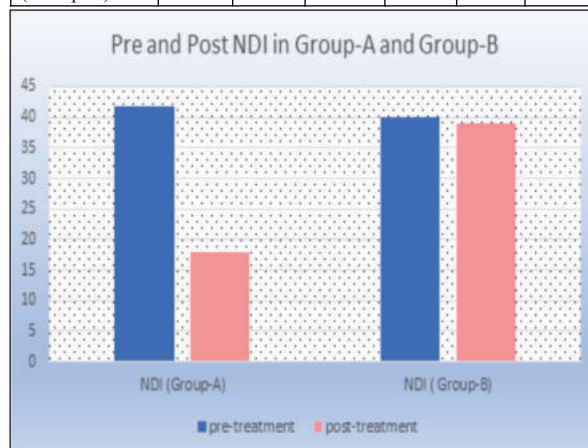


Graph 5.1: Intergroup Comparison Of Pre And Post-treatment Of NPRS Score For Group-A And Group-B

Table 2 and Graph 1 show Intergroup comparison of pre and post NPRS in Group-A and Group-B. where the p-value of Group-A is 0.00 and in Group-B the p-value is 0.019. A statistically significant difference was found between the pre and post-treatment of NPRS score in Group-A.

Table 5.3: Intergroup Comparison Of PRE And POST Treatment Of NDI Score For Group-A And Group-B

Outcome	Pre-Treatment		Post-Treatment		t value	p value
	Mean	SD	Mean	SD		
NDI Score (Group-A)	41.86	± 3.62	17.86	± 3.64	61.48	0.00
NDI Score (Group-B)	40	± 6.30	39	± 6.09	2.44	0.028



Graph 5.2: Intergroup Comparison Of Pre And Post Treatment Of NDI Score For Group-A And Group-B

Table 3 and Graph 2 show an Intergroup comparison of pre and post NDI in Group-A and Group-B. where the p-value of Group-A is 0.00 and in Group-B the p-value is 0.028. A statistically significant difference was found between the pre and post-treatment of NCV (latency) score in Group-A. The result was analyzed in SPSS version 22.0. The Independent two sample test was used for Intergroup

comparison and Paired-T Test was used for Intragroup comparison. A significant improvement was seen in Experimental Group A.

DISCUSSION

This study deliberated the effectiveness of Alexander technique and theragun in neck pain patients Among bus drivers. The group were divided into two groups, Group-A were received alexander Technique along with theragun, attained a significant effect in neck pain. Group-B were not received any treatment.

This study is unique and gives the introduction of Alexander technique and Theragun but very few researches are in Evidence of the Alexander and theragun. According to study done by Romy Lauche, Mareike Schuth et al. The Alexander Technique was not higher level to local heat application in treating chronic non-specific neck pain.

Neck pain is a 'discomfort, ache, or pain'. It is from occiput to third thoracic vertebra and also involving the medial borders of the both scapulae. neck pain is a type of distress or pain.¹

The Alexander Technique is a popular type of alternative therapy. AT's creator is "Frederick Matthias Alexander". It is based on the poor posture gives rise to a range of health problems.^{13,14}

According to study done by, Dr. Roshni Patel and Dr. Atit Patel et al. the Theragun is Effective for upgrade in the back flexibility may also make better horse-riding performance. They concluded that Theragun is more effective for reducing pain.

TG is a handheld percussive therapy device. TG uses a soft, blunt tip for a deep massage to various muscles throughout the body. Theragun aim is to help alleviate pain and also increase range of motion.^{16,17,18}

The reason behind reducing the neck pain and improving posture in bus driver because of Alexander Technique work on alter tone and body schema via spatial attention and executive processes, which is turn and affect low-level motor elements in body and theragun is work on nervous system and it is blocking pain signals to the brain and increase blood flow to muscle.

CONCLUSION

Alexander technique along with Theragun is more effective to relief neck pain, improving the posture and quality of life of bus drivers.

Limitations Of The Study:

- Small sample size is included in this study.

Future Recommendations Of The Study:

- The study can be revised involving larger sample size
- Further studies can be taken up with different intervention for posture Correction and pain relief.
- Alexander technique and theragun is also useful in other occupation.

Acknowledgment

First and foremost, I would like to thank my parents for their valuable support and confidence throughout my study.

I would like to thank my mentor and guide Dr. Roshani Patel (M.P.T. Musculoskeletal and Sports Science), Assistant Professor, and Nootan College of Physiotherapy for the valuable guidance and advice whenever I needed.

I would also like to thank my patients for their participation, support and understanding without them it was not easy to carry out the whole research.

List of Abbreviations

NPRS - Numerical Rating Scale

SPSS- Statistical package of social sciences.

Ctrt Trial Registration No: CTRI/2021/11/048874

REFERENCES

1. Ehrlich, G. (2009). Kelley's Textbook of Rheumatology. *JAMA*, 302(8), 900. doi: 10.1001/jama.2009.1254
2. Binder, A. (2007). Cervical spondylosis and neck pain. *BMJ*, 334(7592), 527-531. doi: 10.1136/bmj.39127.608299.80
3. Edmondston, S., & Singer, K. (1997). Thoracic spine: anatomical and biomechanical considerations for manual therapy. *Manual Therapy*, 2(3), 132-143. doi: 10.1054/math.1997.0293

4. Bernard, Bruce P., ed (1997). "Musculoskeletal disorders and workplace factors: a critical review of epidemiologic evidence for work-related musculoskeletal disorders of the neck, upper extremity, and low back."
5. Vos, C., Verhagen, A., Passchier, J., & Koes, B. (2008). Impact of motor vehicle accidents on neck pain and disability in general practice. *British Journal Of General Practice*, 58(554), 624-629. doi: 10.3399/bjgp08x330762
6. EKLUND, J., ODENRICK, P., ZETTERGEN, S., & JOHANSSON, H. (1994). Head posture measurements among work vehicle drivers and implications for work and workplace design. *Ergonomics*, 37(4), 623-329. doi: 10.1080/00140139408963678
7. Blanpied, P., Gross, A., Elliott, J., Devaney, L., Clewley, D., & Walton, D. et al. (2017). Neck Pain: Revision 2017. *Journal Of Orthopaedic & Sports Physical Therapy*, 47(7), A1-A83. doi: 10.2519/jospt.2017.0302
8. Nordin, M., Carragee, E., Hogg-Johnson, S., Weiner, S., Hurwitz, E., & Peloso, P. et al. (2009). Assessment of neck pain and its associated disorders. *European Spine Journal*, 18(3), 435-436. doi: 10.1007/s00586-009-0888-x
9. Côté, P., Cassidy, J., & Carroll, L. (1998). The Saskatchewan Health and Back Pain Survey. *Spine*, 23(15), 1689-1698. doi: 10.1097/00007632-199808010-00015
10. Fejer, R., Kyvik, K., & Hartvigsen, J. (2005). The prevalence of neck pain in the world population: a systematic critical review of the literature. *European Spine Journal*, 15(6), 834-848. doi: 10.1007/s00586-004-0864-4
11. Hackett, G., Hudson, M., Wylie, J., Jackson, A., Small, K., Harrison, P., & O'Brien, J. et al. (1987). Evaluation of the efficacy and acceptability to patients of a physiotherapist working in a health centre. *BMJ*, 294(6563), 24-26. doi: 10.1136/bmj.294.6563.24
12. Waalen D, White P, Waalen J. Demographic and clinical characteristics of chiropractic patients: a 5-year study of patients treated at the Canadian Memorial Chiropractic College.
13. Alternative Medicine – A Critical Assessment of 150 Modalities.
14. Gillespie, M. (2004). The Actor and the Alexander Technique (review). *Theatre Topics*, 14(2), 501-502. doi: 10.1353/tt.2004.0016
15. Bjerken, T., Mello, B., & Mello, R. (2012). Cultivating a lively use of tension: the synergy between acting and the Alexander Technique. *Theatre, Dance and Performance Training*, 3(1), 27-40. doi: 10.1080/19443927.2011.649625
16. Cochrane, D. (2017). Effectiveness of using wearable vibration therapy to alleviate muscle soreness. *European Journal of Applied Physiology*, 117(3), 501-509. doi: 10.1007/s00421-017-3551-y
17. Imtiyaz, S., Veqar, Z., & Shareef, M. (2014). To Compare the Effect of Vibration Therapy and Massage in Prevention of Delayed Onset Muscle Soreness (DOMS). *JOURNAL OF CLINICAL AND DIAGNOSTIC RESEARCH*. doi: 10.7860/jcdr/2014/7294.3971
18. Reiner, M., Tilp, M., Guilhem, G., Morales-Artacho, A., Nakamura, M., & Konrad, A. (2021). Effects of a Single Proprioceptive Neuromuscular Facilitation Stretching Exercise With and Without Post-stretching Activation on the Muscle Function and Mechanical Properties of the Plantar Flexor Muscles. *Frontiers in Physiology*, 12. doi: 10.3389/fphys.2021.732654
19. Cochrane, D., Loram, I., Stannard, S. and Rittweger, J., 2009. Changes in joint angle, muscle-tendon complex length, muscle contractile tissue displacement, and modulation of EMG activity during acute whole-body vibration. *Muscle & Nerve*, 40(3), pp.420-429.
20. Koeda T, Ando T, Inoue T, Kamisaka K, Tsukamoto S, Torikawa T, et al. A trial to evaluate experimentally induced delayed onset muscle soreness and its modulation on by vibrations Environmental Medicine: annual report of the Research Institute of Environmental Medicine, Nagoya University. 2003;47: 22-25.