

EFFECTIVENESS OF *PICHU* IN TENSION NECK SYNDROME A PILOT STUDY

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ABSTRACT

Tension Neck Syndrome (TNS) commonly presents in people who repetitively use their neck, shoulder and hands for a long period of time. It causes pain and stiffness over the neck muscles causing significant reduction in work efficiency and productivity. *Pichu* is a local palliative *Ayurvedic* treatment procedure used for the treatment of TNS. The study aimed to assess the effectiveness of *Pichu* in TNS. A single group pre test – post test pilot study of 20 randomly selected TNS patients attending at selected site was conducted. *Pichu* was applied up to eight days for 20 minutes daily. Pre and post intervention measurements were taken on Visual Analog Pain Scale (VAS) and Neck Disability Index (NDI). Paired t test was used for comparing the means. Out of 20 patients, ten (50 %) were female, ten (50%) had computer related works. Before intervention, 13 (65%) had moderate pain and 11 (55%) had moderate neck disability. After eight days of intervention, 11 (55%) patients got rid of pain and only four (20%) had moderate neck disability. Two separate pair t tests showed statistically significant differences ($P < 0.001$) between before and after intervention mean scores of Visual Analog Scale and Neck Disability Index. *Pichu* is found to be effective for reducing pain and neck disability in present study TNS patients.

Keywords: *Pichu*, Pain, Tension Neck Syndrome

INTRODUCTION

Tension neck syndrome is defined as the pain in the neck and shoulder with palpation tenderness in the cervical and trapezius muscles.¹ Main causes of TNS are repetitive or cyclical work activities that involved either neck, arm or shoulder motions that generate loads to the neck or shoulder area causing static sustained contractions of neck.^{2,3} Tension Neck Syndrome has the causal relationship with physical work related factors. The prevalence rate of tension neck syndrome (TNS) among male industrial workers in the United States was reported to be

4.9%.² High prevalence (6.2%) of TNS also found among slaughter house workers because of repetitive work in meat cutting, fast work paces and high work resistance.³ In similar prevalence study, Tension Neck Syndrome recorded among 3.5 % of frequent computer users.⁴ The Prevalence rates and odds ratios study of shoulder-neck diseases in different occupational groups found Keyboard operators had an odds ratio of 3.0 for tension neck syndrome.² Different studies showed that various musculoskeletal pain-conditions contributed sickness absence, economic and social burden and disability among

people.^{5,6} TNS is managed in *Ayurveda* by medication, manual massage with different medicated oil and therapies like *Pichu*, *Nadi swedan* and *Bahya Basti*. Among them, *Pichu* is the simplest, affordable and accessible treatment option that can be practiced by every individual at home. Classically, It was described as the process of applying cotton pads gently over head after soaking into medicated oils.^{7,8} Nowadays it is being used for alleviating muscular pain in neck and shoulder. The process of *Pichu* takes about 20 minutes, starting with gentle massage for five minutes and applying oil soaked cotton pad around 12"x12"x2" in size repeatedly for 15 minutes over pain area. The process involves *Snehan* (external oleation), *Swedana* (heat fomentation) and *Abhyanga* (gentle massage) which are described separately in different ayurveda books for pacifying *Vata*.^{7,8} Vitiated *Vata* is attributable to pain, hard and stiffness in body.^{7,8,11} To the best of our knowledge, studies on effectiveness of *Pichu* in neck and shoulder muscular pain are rare.

Therefore, we conducted this study to assess the effectiveness of *Pichu* over neck muscle pain and neck disability in TNS patients at selected site in Nepal.

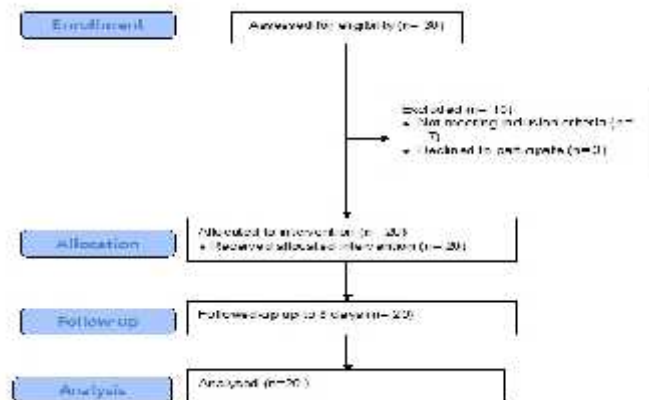
METHODS

Design: This was a single group pre-test, post-test pilot study conducted among the patients with Tension Neck Syndrome appearing at selected site, from June to October 2012.

Ethical approval: Study protocol was reviewed and approved by Ethics Review Committee of Nepal Health Research Council.

Selection of patients: We assessed 30 patients for eligibility who were attending the screening camp at selected site with the complaint of neck pain. After clinical and radiological investigations, seven patients did not meet the inclusion criteria and three patients declined to participate in research. 20 patients, equal number of male and female, were assigned in a group and allocated to intervention (figure 1). We obtained the written consents before their participation in research.

Figure 1. Participants flow diagram



Inclusion criteria

The inclusion criteria were patients of either gender, of age between 18 to 45 years, diagnosed with TNS not more than 1 year and ability to provide informed consent.

Exclusion criteria

We excluded the patients who had the age beyond the limit of 18-45 years, with cervical syndrome, cervical spondylitis and any neck related pathological conditions. Patients who took

the other treatment and/or medication than intervention before and during the study period were excluded from the study.

Baseline measurements: The study team collected the pre exposure data on pain and neck disability level using Nepali-translated standard form of self administered questionnaires on Neck Disability Index (NDI). The NDI tool had

total ten sections and each section had score ranging from 0 to 5. The disability was differentiated into five levels according to the NDI score (Table 1).⁹ We measured the pain intensity level using standard Visual Analog Pain Scale (VAS) and classified it into four categories (Table 2).¹⁰

Table 1. Classification of neck disability

Neck Disability Index Score (%)	Disability
0-20	Minimal
21-40	Moderate
41-60	Severe
61-80	Crippled
81-100	Bed bound

Table 2. Visual Analog Pain Scale (VAS)

Pain Scale Score	Pain level
0	No pain
1 to 3	Mild pain
4 to 6	Moderate pain
7 to 10	Severe pain

Treatment

Pichu was applied for 20 minutes daily for next eight days, starting with gentle massage for five minutes and applying of oil soaked cotton pad of 12"x12"x2" in size repeatedly for 15 minutes over pain area. The temperature of oil was maintained between 55 to 60 °C in 28 °C room temperature.

Outcome measurements: We measured the post exposure data on neck disability and neck pain after eight days of intervention. We used the same NDI and VAS tool that was previously used in baseline measurements.

Statistical analysis: We used SPSS version 16 for data entry and analysis. Both descriptive and statistical analyses were conducted. We compared the pre and post intervention means by paired t test. A level of $p < 0.05$ was set to show statistical significant.

RESULTS

Out of 20 patients, ten (50 %) were female, ten (50%) had computer related works (Table 3). The overall mean age of patients was 31.8 years. Average onset of signs and symptoms of TNS was 3.9 months. Before intervention, mean score for VAS was 3.8 and, which, after intervention, changed into 0.65. The mean score of NDI was also changed from 15.4 to 2.3 after eight days of intervention. Thirteen patients (65%) had moderate pain and remaining seven (35%) had mild pain before study. After eight days of intervention 11 (55%) patients were completely free from pain (Table 4). Eleven (55%) patients had moderate disability before applying *Pichu*, which was reduce to 4 (20%) after intervention (Table 5).

Table 3. Demographic and socioeconomic characteristics of patients

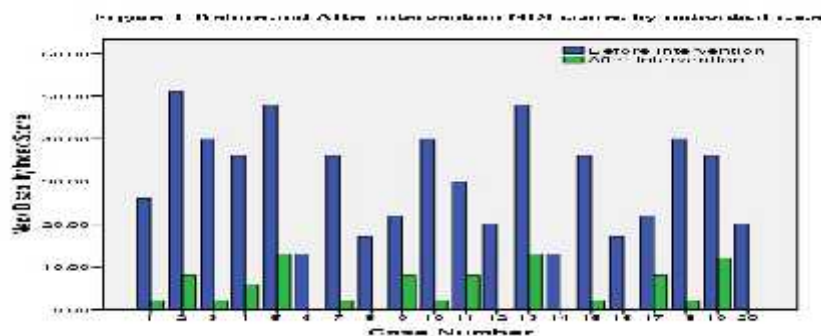
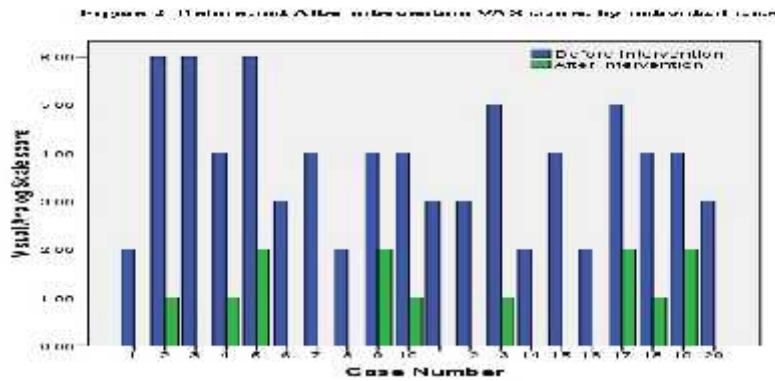
Characteristics	N (%)
Male	10 (50 %)
Female	10 (50 %)
18-25 Years	2 (10%)
26-35 Years	12 (60%)
36-45 Years	6 (30%)
Computer related occupation	10 (50%)
Other occupations	10 (50%)

Table 4. Number of cases classified by pain level by before and after the study

	Moderate	Mild	No pain
Before study	13 (65%)	Mild= 7 (35%)	
After study		Mild = 9 (45%)	No pain=11 (55%)

Table 5. Number of cases classified by neck disability level by before and after the study

	Severe	Moderate	Minimal
Before study	3 (15%)	11(55%)	6 (30%)
After study		4(20%)	16 (80%)



A significant decrease in Neck Disability Index ($t(19) = 11.74, P=0.000$) was seen after eight days of intervention. The pre study and post study VAS mean scores had also statistically significant difference ($t(19) = 10.76, P=0.000$).

DISCUSSION

Pichu has been long practiced as a local treatment procedure in Ayurveda.⁷ It is mainly used as a palliative treatment for

ailments of the head and spine.¹¹ This research also showed that *Pichu* was effective in reducing the pain and disability associated with Tension Neck Syndrome in current study group. The reason might be the hot and medicated oil used in *Pichu* helped to pacify the aggravated *Vata*. According to Ayurveda, pain is mainly by the vitiated of *Vata*.¹¹ In the same way, the local heat application

might have helped to relax muscles and made myofascial trigger points less painful. A Canadian study found the application of local heat was effective in reducing pain and disability caused by knee osteoarthritis.¹² Also a study in USA that applied heatwrap on pain found that continuous low-level heatwrap therapy provided significant therapeutic benefits in patients with acute nonspecific low back pain and decreased muscle stiffness and disability when compared with placebo.¹³ Considering the small number of patients in this study, the result may not be validated for large population. Without control group, this study could not also point out the extent of reduction in pain and disability during natural course of disease. As *Pichu* involves multiple processes of using heat, medicated oil and gentle massage, further research is needed for controlling the cofounding, and compare and understand the effectiveness of individual process.

CONCLUSION

Pichu is effective in reducing pain and disability in Tension Neck Syndrome in current study population. There is a need of large experimental study for validating and recommending the use of *Pichu* in Tension Neck Syndrome.

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