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Original Article

Alexander Technique: Effective Approach in Treating Neck Pain in Breastfeeding Women

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Abstract:

Objective: This study aimed to investigate the effectiveness of the Alexander technique in reducing neck pain among lactating postpartum women with chronic neck pain. **Methods**: A randomized controlled trial was conducted involving ٦٠ lactating women, 6 weeks to 12 months postpartum, suffering from chronic nonspecific neck pain. Participants were randomly assigned to a control group [n = ٣٠], receiving conventional physical therapy, or a study group [n = ٣٠], receiving conventional therapy in addition to Alexander Technique lessons. The outcome measure was assessed pre- and post-intervention using Numeric Pain Rating Scale [NRS]. The intervention lasted five weeks, Data were analyzed using paired t-tests, independent t-tests, and repeated-measures MANOVA. **Results**: Both groups showed significant within-group improvements across all outcome measures, significant decrease in mean value of pain in group A by 39.4% and group B by 59.9% [$p < 0.05$]. While there was a statistically significant post treatment difference emerged in favor of Group B [$p < 0.01$]. **Conclusion**: The Alexander technique, when integrated with conventional physical therapy, appears to be a highly effective intervention for managing chronic neck pain among lactating postpartum women.

Keywords: Alexander Technique; chronic neck pain; postpartum women; breastfeeding; physical therapy; randomized controlled trial**.**

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1. Introduction:

Breastfeeding is one of the earliest and most important health-promoting practices in a child's life. Research shows that breastfed infants have a lower risk of becoming overweight or obese, are less likely to develop chronic conditions such as diabetes, experience fewer infections [e.g., otitis media], and tend to perform better on cognitive tests **[1].** Breast milk is widely recognized as the ideal source of nutrition for infants. Typically, breastfeeding sessions last about 15–20 minutes and occur every 2–3 hours, totaling around 8–12 feedings daily. This results in mothers spending approximately 5 to 6 hours per day nursing their infants **[2].**

To bond with and observe their infants closely during feeding, mothers often maintain a sustained forward-flexed neck posture. Due to the prolonged and frequent nature of breastfeeding, this downward posture may contribute to breastfeeding-related neck pain [BFRNP] in nursing women **[3].**

Improper breastfeeding posture can lead to musculoskeletal [MSK] disorders. Breastfeeding mothers may report discomfort in areas including the breast, neck, upper back, shoulders, elbows, and lower back **[4].** MSK pain is highly prevalent among postpartum women. For example, in Karnataka, India, 99% of mothers reported MSK pain, with 74% suffering from low back pain **[5].** In Kattankulathur, India, neck pain was the most commonly reported MSK complaint among breastfeeding mothers [61%], followed by shoulder [59%], upper back [58%], low back [46%], elbow [41%], and wrist/hand pain [22%], with no reports of lower limb pain. In Nigeria, 51.7% of breastfeeding mothers experienced neck pain **[2].** In Pakistan, the prevalence was 36.8% for neck pain and 22% for low back pain. Similarly, in Japan, 73.1% of postpartum women reported neck and shoulder pain, with breastfeeding being a contributing factor **[6].** Such pain can interfere with mothers' ability to breastfeed effectively and may even result in early discontinuation **[4].** These physical limitations can also negatively affect daily activities and self-care routines **[7].**

Conservative management of MSK conditions often involves a combination of manual therapy, guided exercises, patient education, postural re-education, and home-based interventions. Manual therapy [MT] helps reduce pain and muscle tension, providing short-term relief for neck pain. Techniques include stretching of cervical muscles, passive mobilizations, massage, and fascial release **[8].** Passive modalities such as hot packs, ultrasound, TENS, and massage are also effective for short-term pain control in both acute and chronic cases **[9].**

The Alexander Technique [AT] is a unique approach developed by Frederick Matthias Alexander, emphasizing the relationship between posture and overall health **[10].** It teaches individuals to improve postural control and regulate muscle tone, making it a valuable self-care method. Research suggests that those with chronic neck pain who continue practicing AT may experience long-term benefits **[11].**

The technique aims to reduce excess muscular tension, promote spinal decompression, enhance muscular balance, and improve flexibility. It encourages awareness of movement, posture, and balance, contributing to better body mechanics **[12].** Although not primarily a medical treatment, AT is considered an educational strategy aimed at improving quality of life and functional performance **[13].**

Evidence indicates that the Alexander technique may be more effective than standard care in reducing pain levels in individuals with chronic non-specific neck pain **[11].**

Considering the increasing interest in holistic and integrative approaches for musculoskeletal health, this study addresses a critical gap by evaluating the effectiveness of the Alexander Technique as an adjunct to conventional physical therapy in managing chronic neck pain in lactating women. This randomized controlled trial aimed to assess the impact of AT on neck pain in lactating women. It was hypothesized that participants receiving AT alongside conventional therapy would show greater improvements across the measured outcome compared to those receiving conventional care alone.

2. Materials and Methods:

Study Design:

This study was designed as prospective, single blinded, pre-post-test, randomized controlled trial study, conducted between November 2024 and January 2025. Written informed consent was obtained from all participants prior to their inclusion.

Participants:

Sixty lactating females suffered from neck pain participated in the study. They selected randomly from the department of Obstetrics & Gynecology at Zagazig University hospital, Zagazig, El-Sharqia governorate, Egypt.

Inclusion and exclusion criteria: Inclusion criteria: Lactating females experienced neck pain [six weeks to 1year postpartum]. Their age ranged from 20-35 years old. Their body mass index [BMI] was less than 30 kg/m2. They were able to understand and follow the Alexander Technique instructions.

Exclusion criteria were: Neck pain as consequence of disc protrusion or prolapse, whiplash, congenital deformity of the spine, spinal stenosis, neoplasm, inflammatory rheumatic disease, neurological disorder, and psychosis. Invasive treatment of the spine within the previous three weeks, or spinal surgery or presence of neck history of trauma. Contraindications to spinal movement, such as fracture or dislocation.

Randomization:

Sixty women were randomly assigned [1:1] to either a study or control group [n=30 each] using a sealed envelope technique. Each envelope contained a card indicating either study or control group, and an independent researcher selected one card to assign the participants to their groups. No participants withdrew after randomization.

Interventions:

Conventional physical therapy treatment: Participants in the control group [group A] received a conventional physical therapy treatment in the form of moist heat on their necks for 30 minutes per session, five times per week for five weeks.

Alexander Technique: Participants in the study group [B] received the same conventional therapy as group [A] in addition to the Alexander technique which was applied for 60 min, 2 classes per week, for 5 weeks [10 classes]. Participants were guided to identify and reduce habitual muscular tension and explore alternative, more efficient movement strategies **[14].**. The classes included instruction in basic biomechanical and ergonomic principles related to the anatomy of the neck, spine, and major joints sessions covered posture, body mechanics, and daily activities like sitting, standing, and using a computer. Gentle touch was sometimes used to help them feel and adjust their movements **[14].**

Instructional Methods:

Teaching methods included speaking, showing, guiding with hands, and giving feedback during real tasks. With permission, instructors used light touch on the head, neck, or back to help reduce tension **[15].** Lessons involved chair work, table work, and daily activity-based tasks **[15].** Participants were also encouraged to practice lying in a semi-supine position for 15–20 minutes daily, using head support, to promote spinal decompression and reinforce postural integration techniques **[16].** Each session followed a consistent structure: 10 minutes: Participant reflection and question period, 20 minutes: Presentation of new material, 20 minutes: Individual and group practical activities, 10 minutes: Summary discussion and individualized application planning **[14].**

Lesson Procedures:

- Noticing tension in different body parts while sitting.
- Letting go of tension instead of forcing good posture.
- Slowly adding movement with focus and awareness **[15].**

Outcome Measures:

The outcome variable was assessed at baseline and immediately after the 5-week intervention period.

- Numeric Pain Rating Scale [NRS]: A single-item, 11-point scale [0–10] used to quantify pain intensity, where 0 denotes no pain and 10 denotes the worst imaginable pain **[17].**

Statistical Analysis

Data were analyzed using SPSS Statistics version 25. Normality of data distribution was confirmed using the Shapiro–Wilk test. Within-group comparisons were made using paired t-tests. Between-group differences were analyzed using independent-samples t-tests.

Effect sizes were calculated using partial eta squared [$\eta^2 p$] for MANOVA and Cohen's d for t-tests. Statistical significance was set at $p < 0.05$.

3. Results:

Participant Characteristics:

Sixty participants completed the study, with no dropouts reported. Baseline characteristics, including age, weight, height, and BMI, showed no significant differences between the two groups [$p > 0.05$], confirming comparability at baseline **Table [1].**

Table 1. Comparison of Baseline Characteristics between Group A and Group B

Variable	Group A [Mean ± SD]	Group B [Mean ± SD]	t-value	p-value	Significance
Age [years]	31.17 ± 3.23	29.56 ± 3.97	1.066	0.073	NS
Weight [kg]	69.83 ± 9.82	73.67 ± 9.39	-1.694	0.096	NS
Height [m]	1.733 ± 0.067	1.666 ± 0.047	-1.756	0.094	NS
BMI [kg/m²]	25.83 ± 2.79	26.44 ± 2.71	-1.052	0.206	NS

Numeric Pain Rating Scale [NRS] :

Within-Group Comparison:

In Group A [Control]: there was significant decrease in mean value of NRS in group A post treatment compared with that pre-treatment.

In Group B [Study]: there was significant decrease in the mean value of NRS in group B post treatment compared with that pre-treatment, as shown in **[Table 2].**

Table 2. Descriptive and Inferential Statistics of Numeric Pain Rating Scale [NRS] Scores for Group A [Control] and Group B [Study]: Pre- and Post-Treatment Comparisons.

NRS Metrics	Group A [Control]	Group B [Study]
Pre-Treatment [Mean ± SD]	7.04 ± 0.78	7.28 ± 0.78
Post-Treatment [Mean ± SD]	4.27 ± 0.69	2.92 ± 0.67
Mean Difference	2.٧٦	4.35
95% Confidence Interval	[2.51, 3.01]	[4.06, 4.64]
t [df=35]	22.36	30.32
p-value	< .001	< .001
% of Change	39.4%	59.9%

Between-Groups Comparison: Numeric Pain Rating Scale [NRS]

There was no significant difference in the mean values of NRS pre- treatment between the two groups [A&B], indicating comparability in initial pain levels, while there was a statistically significant post treatment difference

emerged in favor of Group B. Post-treatment NRS scores were significantly lower in group B compared to group A. as shown in **[Table 3].**

Table 3. Comparison of NRS scores between Group A [Control] and Group B [Study] before and after Treatment

Time Point	Group A [Mean ± SD]	Group B [Mean ± SD]	Mean Difference	t [df=70]	p-value
Pre-Treatment	7.04 ± 0.78	7.28 ± 0.78	-0.24	-1.31	.192
Post-Treatment	4.27 ± 0.69	2.92 ± 0.67	1.35	8.45	< .001
% of Change	39.4%	59.9%			

4. Discussion:

The current study aimed to evaluate the effectiveness of Alexander technique [AT] in reducing neck pain in lactating women. The results of this study indicate that both groups indicate a significant improvement in the mean value of pain intensity measured by NRS. A comparison between the groups showed that there was a significant reduction in neck pain in favor of group B [$p < .001$].

The significant improvement observed in Group A can be attributed to the effect of moist heat in pain relief. Moist heat applications increase skin, muscle, and joint temperatures, promote vasodilation, and enhance oxygen uptake and enzymatic activity, supporting tissue healing. These effects improve connective tissue elasticity, reduce muscle tension, and increase range of motion [ROM]. As a result, may improve pain, strength, stiffness, ROM, and quality of life in musculoskeletal conditions **[18]**.

As shown by the result of this study that the significant improvement observed in favor of group B can be attributed to the advantageous impact of AT on pain in lactating women with chronic neck pain. There is a growing body of evidence supporting the positive effect role of AT. The superior improvement in AT group can be explained by the educational and postural re-education components of AT that cause long-term behavioral changes in movement and tension control, which may be similarly effective in addressing chronic neck pain by improving neuromuscular coordination and reducing maladaptive postural habits **[19].**

MacPherson **et al [16]**, investigated the effect of Alexander technique lessons for persons with chronic neck pain, they applied 20 one-to-one Alexander lessons of 30 minutes duration weekly plus usual care versus usual care alone and found that Alexander technique lessons significantly reduced neck [pain and disability measured by NPQ] and improvements in QOL [measured by SF-12v2] compared to usual care only, with improved self-efficacy likely contributing to the sustained benefits [$P < 0.001$]. Similarly, **Little et al [19]** focused on the effect of AT on chronic low back pain, its findings are relevant and supportive of the current study's results. The trial demonstrated that AT lessons significantly reduced pain [measured by Von Korff scale, $P<0.001$], the disability measured using [the Roland Morris disability questionnaire, $P=0.008$] and improve quality of life [QOL] [measured by SF-36, $P<0.001$] over a 12-month period. Participants received 24 lessons initially twice weekly for six weeks, then weekly, with two follow-up sessions at seven and nine months experienced a reduction in [pain and disability] and improvement in QOL.

A study by **Becker et al [14],** who examined the effects of AT instruction on chronic neck pain, they found that ten Alexander technique classes over five weeks [twice weekly, 60 minutes each] led to a significant reduction in chronic neck [pain and disability measured by northwick park questionnaire] and decrease in sternocleidomastoid activation [measured by craniocervical flexion test with Electromyography] and concluded that Alexander Technique classes are effective in reducing neck pain and associated disability in individuals with chronic neck pain. The

sustained improvement observed in the Alexander group suggests that this approach is both acceptable and beneficial for long-term management of chronic neck pain.

5. Conclusions:

This study provides strong evidence that the Alexander Technique can be an effective way to reduce neck pain in lactating women. By teaching better movement habits, reducing muscle tension, and improving postural control.

Declaration of Interests:

The authors declare no conflicts of interest related to this study.

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