

Effect Of Postural Corrective Exercises In Forward Head Posture- Review Of Literature

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ABSTRACT

Background: Forward head posture is the most common misalignment of neck. It can lead to headaches, unusual neck pain, and stiffness in muscles. Posture corrective exercises(PCE) are used to correct this misalignment, hence improving the quality of life of patients.

Methods: The databases included are google scholar and PubMed. Researchers have used English language. The studies included were about posture corrective exercises that use correct forward head posture. Data is extracted from articles in various systematic reviews and randomized controlled trials.

Result: Several studies show that Postural corrective exercises were effective in correcting forward head posture and improving craniovertebral angle. These exercises help to improve posture, muscle strength and flexibility.

Conclusion: Posture corrective exercises are beneficial for improving forward posture and decreasing the craniovertebral angle which decreases neck pain and enhances quality of life of patients.

Keywords: Forward head posture, exercises, posture, craniovertebral angle (CVA).

INTRODUCTION

Forward Head Posture (FHP) is described as the disorientation of head that is caused due to the translation of head anteriorly with respect to the trunk. Incidence rate of forward head is 66% among 20–50 years of age. The reasons for forward head posture are unusual sitting posture, stiff muscles, usage of high pillow, studying with low height table, using mobile and laptop for long hours. Symptoms associated with the FHP are severe neck pain, headaches, temporal mandibular joint dysfunction, decrease in mobility of neck, increase in kyphotic curve, and decrease in vital capacity (30%), increase in craniovertebral angle (CVA). Tender points in suboccipital muscles travel towards both sides of the head typically over the occipital and temporal areas, due to which it typically leads to headaches. The reason for activation of trigger points over these muscles might be due to poor posture of the cervical spine.^[1]

Two exercises to strengthen the deep cervical flexors and shoulder retractors and two

stretching exercises for the pectoral and sternocleidomastoid muscles constitute the postural corrective exercise program. These exercises were selected based on the assumption that execution of therapeutic exercise is effective in the correction of the neck and shoulder alignment.^[4]

Three stretching exercises (focusing on the pectoralis minor, sternocleidomastoid, and levator scapulae muscles) and four strengthening exercises (focusing on the longuscolli, longuscapitis, middle trapezius, lower trapezius, serratus anterior, rhomboids, teres minor, and infraspinatus muscles) constitutes a stabilizing exercises program. While the stretching program includes one-sided pectoralis stretches, levator scapulae muscle stretching, and self-stretching of the sternocleidomastoid muscle, the strengthening exercises included chin tucks while lying with the head touching completely with the plinth and Y-to-W exercises while the patient is lying on their stomach.^[5]

REVIEW OF LITERATURE

1. **David A. Titcomb et.al (2023)** performed a randomized control trial on effects of postural correction education on craniovertebral angle in young adults with FHP. 79 individuals were included comprising of 55 women and 24 men. After 4 weeks of protocol including stretching, strengthening and self-myofascial release the study conclude that this protocol assists the FHP intervention protocols.^[10]
2. **Seoyon Yanget.al, (2023)** narrate a systemic review for treatment of forward head posture leading to chronic neck pain. After reviewing 2516 articles, 16 were reviewed in which 11 studies included with exercise programs and 5 included with manual therapy after which it concluded that both are beneficial to treat chronic neck pain thus correcting forward head posture.^[7]
3. **Amita Aggarwalet.al, (2022)** This study explored the added benefit of suboccipital release with Postural corrective exercises for forward head posture and neck pain. Fifty participants were divided into two groups: one received both treatments, and the other only conventional therapy. Treatment was given three times a week for two weeks. The experimental group showed significant improvement in pain, disability, and neck mobility. The study concluded that suboccipital release enhances conventional therapy outcomes.^[1]
4. **Alshaymaa S.ABD Elazeimet.al, (2022)** conducted a randomized controlled trial on 60 subjects. The outcome measures included Arabic Neck Disability Index, activity of muscle in root mean square format at rest and during motion, pressure pain threshold, craniovertebral angle, and maximum voluntary isometric contraction. Results were such that there was an increase in CVA. Muscle strength improves and tightness in upper trapezius decreases by inhibiting its function, adding scapular stabilizing exercises improves pain pressure threshold and disability.^[2]
5. **Zahra Heydari et.al (2022)** performed a clinical trial on 103 male students. Outcome measures were craniovertebral angle and shoulder angle after 8 weeks of corrective exercises the MCDI values of CVA and SA were 1.40 and 1.34. The result showed selective corrective exercises were beneficial in FHP and improved CVA values.^[3]
6. **Shahram Irani et.al (2022)** conducted a study to rule out the effect of head and neck stabilization exercises for improving balance in older individuals with FHP. 30 elderly subjects were assessed for 8 weeks with Time up and Go test. The results showed that there is an improvement of 2 minutes in test after the intervention is applied hence changed the CVA and balance in older individuals.^[13]
7. **Shabhrumjoshiet.al (2022)** make a study on 19 samples to see the result of Exercises in the management of FHP. Neck disability index (NDI), PEDro score, and cervical positional sense were the outcome measures. The study concluded that 30 days of postural corrective exercises were effective in improving forward head posture. It shows significant changes in NDI.^[4]
8. **Ganesh M Balthillaya et.al (2022)** performed a systemic review on effect of posture correction intervention for mechanical neck pain with forward head posture. Outcome measures were postural variables for FHP, disability scores for neck pain and quality of life, a quality synthesis was conducted and statistically pooling of result is observed.^[6]
9. **Yazdani Saba et.al (2021)** aims to investigate the 12 weeks corrective exercise protocol in cervicogenic headache and round shoulders with forward head posture on 32 women. Randomly the patients were divided into two groups. After completing the exercises there was significant improvement in shoulder and head angles.^[5]
10. **Rahman sheikh hoseini et.al (2018)** conducted a systemic review and meta-analysis to rule out the effects of corrective exercises on postural variables in individuals with FHP. 672 participants completed the inclusion criteria. Odds ratio for CVA, SA and pain were 6.7. This study concluded that therapeutic exercises results in improving CVA and SA hence helped in correcting forward head.^[11]
11. **Jeong-II Kang et.al (2018)** investigated the observation of scapular movements on neck alignment and muscles in FHP. An

intervention was done on 30 patients for 4 weeks. The group were divided into 15 subjects into scapular stabilizing exercises and the other 15 were supposed to perform neck stabilizing exercises. Craniovertebral angle, Cranio rotation angle with muscle activity were assessed. The results were such that the scapular stabilizing exercises had significant improvements in neck alignment.^[12]

12. **Boyoung Im et.al (2016)** investigated effects of scapular stabilizing exercises on neck posture and muscle involvement with neck pain and FHP. 15 subjects were included and divided into 2 groups as scapular stabilization group (n=8) and control group (n=7) for 4 weeks. The study come up to the conclusion that scapular stabilization exercises significantly improve the craniovertebral angle and quality of life.^[9]

13. **Ibrahim M. Moustafa et.al (2015)** proposes a study to determine the effect of adding forward head posture corrective exercises in lumbosacral radiculopathy treatment. In these 154 adults were included which were measured by primary outcome Oswestry disability scale and secondary outcome includes trunk inclination, lateral deviation, and pelvic inclination. This study concluded that the addition of posture corrective exercises for improving FHP deformity leads to positive effect on secondary outcomes.^[8]

METHODOLOGY

Using PubMed and Google Scholar searches were performed. Keywords Forward head posture, exercises, posture, craniovertebral angle (CVA) were searched. Articles released within the last five years were selected. Languages apart than English were not included. Search strategy includes reviewing articles to elicit the effect of postural corrective exercises in FHP.

DISCUSSIONS AND RESULTS

Postural corrective exercises have been shown to significantly improve postural alignment, reduce musculoskeletal pain, and enhance overall physical function. These exercises target key muscle groups responsible for maintaining proper posture, such as the deep neck flexors, scapular stabilizers, and core

muscles. Regular participation in postural correction programs, typically over a period of 6 to 12 weeks, can lead to noticeable improvements in conditions like forward head posture, rounded shoulders, and thoracic kyphosis. Individuals who engage in these exercises often report a reduction in neck, shoulder, and lower back pain, as well as improvements in balance, flexibility, and muscle strength. Furthermore, postural corrective exercises promote better body awareness and can help prevent the recurrence of posture-related issues when maintained consistently. Overall, these exercises offer a low-cost, non-invasive solution for managing and preventing postural problems, especially in populations with sedentary lifestyles. The limitation of the study is that all the age groups were not included.

CONCLUSION

Postural corrective exercises have been shown to be highly effective in addressing forward head posture (FHP), a common postural deviation associated with prolonged screen time and poor ergonomics. These exercises, which often focus on strengthening deep neck flexors, stretching tight cervical extensors, and improving overall postural awareness, can significantly reduce the degree of forward head alignment. Studies and clinical evidence indicate improvements not only in posture but also in associated symptoms such as neck pain, reduced range of motion, and muscular imbalances. Incorporating a consistent and targeted corrective exercise program can thus play a crucial role in both the prevention and rehabilitation of FHP, promoting better musculoskeletal health and quality of life.

CONFLICT OF INTEREST

There is no conflict of interest suggested in this review of literature.

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