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## Effect of eight weeks corrective exercise program on cranio-vertebral angle, strength of scapular upward rotator muscles and proprioception of shoulder and neck in women with forward head deformity

Faezeh Zangiabadi, Amir Letafatkar and Maliheh Hadadnezhad

Kharazmi University, Iran

**Introduction:** Spinal alignment affects scapular position and shoulder girdle function. Faulty cervical spinal alignment, such as forward head posture (FHP), is usually associated with shortening of the posterior neck extensor muscles and tightening of the anterior neck muscles, as well as the shoulder muscles, affecting scapular position and kinematics. FHP, with a conservative estimate being 66% of the patient population, is one of the most common types of poor postures. It is shown that this abnormal posture is associated with the development and persistence of many disorders including cervicogenic and migraine headaches, myofascial pain syndrome, temporomandibular disorders, abnormal scapular movement, and is also a risk factor for subacromial impingement syndrome and is the typically assumed posture during much work in construction and on assembly lines and has a great role in the development of pain-related occupational injuries that varies between 8% and 41% depend on exposure rate to injury. Additionally, FHP is associated with neck and shoulder pain, and approximately 60% of individuals with neck pain had FHP. Therefore, designing corrective exercise programs in order to improving this deformity and preventing its secondary effects to help individuals and society is very important.

**Participants:** Subjects who demonstrated FHP (30 women; mean age  $24.3 \pm 2.25$  years and craniovertebral angle less than 48 degrees).

**Method:** FHP was measured with lateral photography method, muscle strength was measured with HHD and neck and shoulder proprioception were measured by angle repositioning method. After that, subjects were randomly divided into two groups: study group (receiving corrective exercises) and control group (receiving no intervention). Study group then participated in a 8-week exercise training program. Following these 8- week program, measurements were repeated in the post test.

**Results:** In study group, craniovertebral angle and angle repositioning errors of neck and shoulder were significantly increased and decreased respectively. No significant changes were observed for muscle strength.

### Biography

Faezeh Zangiabadi has completed her MSc from Kharazmi University School of Physical Education and Sport Science.

[std\\_fzangiabady@khu.ac.ir](mailto:std_fzangiabady@khu.ac.ir)

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