



# PREVALENCE OF FORWARD HEAD POSTURE IN IT PROFESSIONALS

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## Abstract

Background - Posture is the orientation or alignment of the human body and can be either static or dynamic. FHP results in an extended head position and flexion of the upper cervical vertebrae and lower cervical vertebrae. This increases the length of the external moment (shoulder) by moving the center of gravity (head) forward along the load bearing axis. Head and shoulder posture malalignments are caused by imbalances in the muscles surrounding the shoulder and upper chest. Due to such adverse effects of FHP, there was a need to assess the prevalence of forward head posture to prevent future complications in the general population.

Methodology – The study was Cross sectional (Observational) study. The study was done in nearby area. The sampling technique was purposive. The sampling size was 60. Study duration was 6 months. Inclusion criteria of individuals were between age group 25-50. Both male and female without any musculoskeletal disease or disorder, any systemic disease or surgery before 6 months.

Result - In this study 60 participants were evaluated in which 35 were female and 25 were male. Among 35 female 27 were having FHP & 8 were non FHP. Among 25 male 14 had FHP & 11 were not FHP. In this study, total 41 had FHP 19 were not FHP.

Conclusion - The study concluded that prevalence of forward head posture was found to be high amongst IT workers.

**Keywords** – Posture, Forward head posture.

## INTRODUCTION

Posture is the orientation or alignment of the human body and can be either static or dynamic. The body and its parts are distributed in such a way that the body remains balanced. Standing, sitting or lying down are all static positions. Dynamic posture refers to a posture in which body parts move, such as walking, running, jumping.[7] Good posture allows movement with minimal strain and damage, while poor posture is any position that increases stress on the joints. FHP is known as an internal factor that causes dysfunction and shoulder and neck pain. FHP results in an extended head position and flexion of the upper cervical vertebrae and lower cervical vertebrae. This increases the length of the external moment (shoulder) by moving the center

of gravity (head) forward along the load bearing axis. Head and shoulder posture misalignments are caused by imbalances in the muscles surrounding the shoulder and upper chest. As a shortening of the upper trapezius, splenius capitis, cervicis and semispinalis capitis, erector spinae and levator scapulae muscles of the neck. This position can change the position of the scapula on the chest wall and impair the ability of the scapula to rotate upward.[1] Greater FHP was associated with a greater deficit in cervical range of motion, particularly neck rotation and flexion.[2]The craniovertebral angle is defined as the intersection of a horizontal line passing through the center of c7 and a line joining the centrum to the skin of the ear above the c7 spinal process. It is measured by taking lateral 2 photographs of the subject in a relaxed sitting position without back support.[7]

The use of photography or the photogrammetric method to estimate FHP was reliable and sensitive. It is a valid method that correlates well with radiography. In addition, it is a simple, feasible and economical method that can be used in various clinical settings. [3]

When people engage in activities such as texting on the phone or working on a laptop, they constantly maintain a forward head posture. This position increases the load on the neck, which increases the load on the neck muscles. When a person looks straight ahead, their head weighs about 4.5 kg. When the head is tilted 15 degrees forward, it weighs about 12 kg on the neck. The weight increases by 18 kg at 30 degrees, 22 kg at 45 degrees and 27 kg at 60 degrees. [4]. This increases the compressive load on the tissues of the cervical spine, especially the facet joints and ligaments. FHP greatly affects respiratory function by weakening the respiratory muscles and decreasing vitality. FHP can negatively affect static balance, semispinalis cervicis weakness. [7]

Due to such adverse effects of FHP, there is a need to assess the prevalence of forward head posture to prevent future complications in the general population. To the best of the researcher's knowledge, there is also no study evaluating the prevalence of FHP among IT workers who themselves deal with postural defects or other musculoskeletal problems. Therefore, the purpose of this study was to determine the prevalence of forward head posture among IT workers.

## **OBJECTIVES**

To assess the prevalence of FHP in IT population.

Improper desk height, screen distance, unsupported body are seen in poorly designed IT offices which causes twisting,bending,and further landing up into musculoskeletal disorder in which FHP is the most common.

To correct and aware the workers about their musculoskeletal disorder as well as the analysis of the worker suffering from forward head posture.

## **METHODOLOGY**

The study was Cross sectional (Observational) study. The study was done in nearby area. The sampling technique was purposive. The sampling size was 60.Study duration was 6 months. Inclusion criteria of individuals were between age group 25-50.Both male and female without any musculoskeletal disease or disorder, any systemic disease or surgery before 6 months.

## **OUTCOME MEASURE –**

Posture analysis software

**PROCEDURE**

Permission from ethical committee and consent was taken. Individuals as per the inclusion criteria were chosen. A total of 60 subjects were taken and their consent will be taken. The participants were asked to stand in front of the grid in left and right lateral view. To avoid conscious posture the individual were asked to march for 5-10 times at a place. Aligned the camera perfectly the photographs were taken. On the Gaiton software for posture, the details of the individual were filled. The report will be generated on the software based on the photographs of both the view i.e., right and left lateral view. The craniovertebral angle is measured and if the angle is less than 50 degrees, it was considered as forward head posture.

**RESULTS**

In this study 60 participants were evaluated in which 35 were female and 25 were male.

Among 35 female 27 were having FHP & 8 were non FHP.

Among 25 male 14 had FHP & 11 were not FHP.

In this study ,total 41 had FHP 19 were not FHP

Total individuals	
male	25
female	35

Table 1

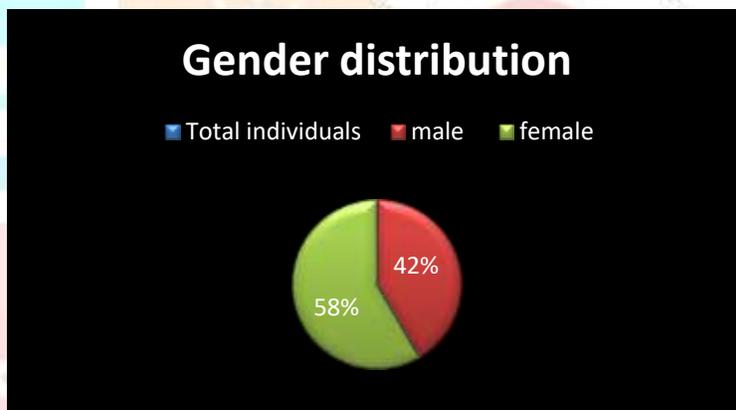


Figure 1

quantification of population with and without FHP	of and
Female Normal	8
Female FHP	27
Male Normal	11
Male FHP	14

Table 2

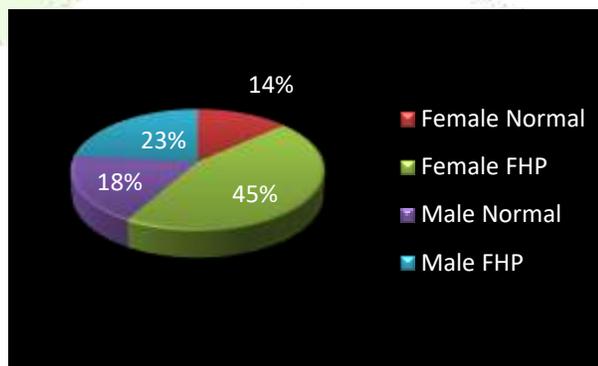


Figure 2

FHP amongst population	41
Non FHP amongst population	19

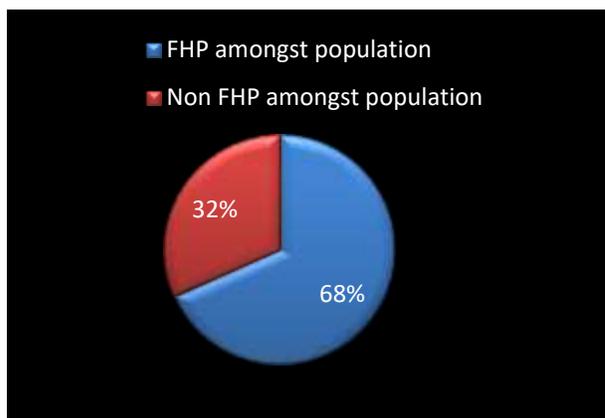


Figure 6

## CONCLUSION

The study concluded that prevalence of forward head posture was found to be high amongst IT workers.

## DISCUSSION

The aim of the study was to find out the prevalence of FHP among IT workers. It turned out that 70 percent of the participants had a forward head position. That prevalence was due to lifestyle differences. It was observed that the participants were using laptops and achieve certain postures or incorrect postures for long periods of time, which could be one of the reasons behind the forward head posture. Also, one of the reasons can be the working postures they achieve in meetings, finishing projects, pressure of workload, wrong placement of desk, chair and computer. Also when working in a sitting position during the maximum working time, the neck positions are asymmetrical or in extreme flexion, in other words, in an ergonomically unsuitable or wrong body posture.

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