

Postural Assessment of Boys between School and College

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Introduction

The good postural alignment is defined as a situation in which each body segment has its center of gravity vertically oriented under the adjacent segments, so that their positions are independent. According to Van Maanen et al., a normal body posture is one that confers an esthetically acceptable appearance and can be maintained for a certain period without discomfort or difficulty. When there is adequate body alignment, the musculoskeletal structures are well-balanced, therefore less susceptible to injuries and deformities. Optimal body alignment also facilitates the acquisition of gross and fine neurological and psychomotor skills, allowing voluntary movements to be coordinated, functional and energy efficient.

Posture is often defined as the relative arrangement of body parts. Good posture is the state of muscular and skeletal balance that protects the body structures against injury or progressive deformity independent of the attitude (erect, lying, stooping, bent) in which these structures are working or resting. Under such conditions, muscles work more efficiently, and ideal positions are allocated to the thoracic and abdominal organs.

Bad posture is a defective relationship between the several parts of the body that produces greater tension in the supportive structures, and where a less efficient body balance on the supportive base occurs.

There are intrinsic and extrinsic factors that can influence the subject's posture, such as age, heredity, the environment or physical conditions in which the subject lives, socioeconomic level, emotional factors, and physiologic alterations due to human growth and development.

Objectives

- 1) To find out at which age the postural deformities occur predominantly.
- 2) To find out the rate of postural alterations among school and college boys.
- 3) To find out the reasons of postural changes/ deformations among school and college children.
- 4) To identify preventive measures and to provide information to the students, parents and teachers about the problem of bad posture.
- 5) To identify corrective measures to correct the deformities if any.
- 6) To make the students posture conscious, so that they can lead a healthy life.

Procedure

The present study was a profile study on “Postural assessment of boys between school and college”.

For the purpose of the study, 78 boys were selected randomly and the exclusion criteria were students with neuromuscular and/or traumatic pathologies, from which 38 from the school studying in 6th and 7th grade of their age ranging between 11 and 13 and 40 boys from VTM NSS College, Dhanuvachapuram studying in degree level of their age ranging between 17 and 20.

The boys were taken to the college physical fitness centre with the prior consent from the School authorities and the parents of the respective children. The data was collected by using a Canon Ixus 130 IS Digital Camera and a Static Posture Assessment Grid, whereas vertical and horizontal planes were marked. Every column in the grid measures 5 centimetres. The subjects were instructed to stand in front of the Posture Grid which placed on the walls of the Physical Fitness Centre. They were asked as if they stand normally during their life situations and ensured that they do not make any intentional correction of position of their structure for the testing procedure. The photographs of anterior, posterior and lateral views of

every subject selected for the study were taken with the supervision of a qualified Physiotherapist. Later the photographs were meticulously assessed by the research scholar and the physiotherapist. The observations were recorded in a four point scale in which severe abnormality is represented by 3 (three) marks (severe), moderate deviation from the normality represents 2 (two) marks (moderate), mild changes from the normal alignment is given 1 (one) mark (mild) and the perfect posture denotes the value of 0(zero) mark shows (nil).

The variables used for this study were;

- **Foot & Ankle**
 - Toe-Out
 - Toe –in
 - Flat Feet
 - High Arch
- **Knee/Hip**
 - Knock Knees
 - Bow Legs
- **Upper Body**
 - Spine Scoliosis
 - Scapula Deviation
 - Shoulder Deviation
 - Head Tilt
- **Lower Body**
 - Knee Flexed
 - Hyper extended
 - Pelvis Anterior tilt
 - Posterior tilt
- **Upper Body**
 - Lumbar Spine Lordosis
 - Flat back
 - Thoracic Spine Kyphosis
 - Shoulders Forward
 - Head Position Forward
 - Back

Results & Conclusion

The data obtained were treated by using Pearson Chi-Square test. Simple differences were found out between each class of deviations. The following results were drawn;

- Knock knees were significantly evident among college boys when compare to school children.
- Flexed knee were significantly greater in number among college boys than school boys.
- Pelvic anterior and posterior tilts among college boys were found to be significantly higher than among school boys.
- Head forward among college boys were significantly higher than among school boys.
- Among school boys lordosis was found to be evident than among college boys.

Besides the above findings, mild, moderate and severe changes in posture were seen in lone and very small numbers among school and college boys.

This study showed high incidences of postural alterations in college boys. Some of the postural alterations, such as knock-knee, flexed knee, pelvic anterior and posterior tilts and head forward. On the other hand lordosis is common among school boys. The alterations may be due to the daily demands on the body, including congenital problems, sitting in

inadequately designed college & school furniture, practicing sedentary behavior, carrying heavy backpacks, and wearing improper shoes.

Recommendations

The findings and conclusions drawn, leads to the following recommendations:

- ✚ While good nutrition is a contributing factor to good posture, the nutritional intake of children was not assessed.
- ✚ Defective vision, adenoids, and bad tonsils tend to have an unfavourable effect on a child's posture.
- ✚ When the hygienic conditions in the school as well as college are not of the best, and health measures are inadequate, there is a moderate decrease of good posture and increase of poor posture.
- ✚ Studies may be replicated with different age categories, varied techniques etc.
- ✚ Postural assessment software can be developed with a data base.
- ✚ Studies may be carried out with psychological and sociological reasons for developing postural deformities in different age and class of people.

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