

THE STUDY OF SCOLIOSIS AND ITS RELATIONSHIP WITH THE LENGTH OF EXTREMITIES IN GIRL STUDENTS OF GUIDANCE SCHOOL IN AHWAZ, IRAN

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ABSTRACT:

Background: The human vertebral column as a frontal position has no deviation, any lateral deviation of frontal position in the vertebral column is called scoliosis. Scoliosis has the potential to lead to serious health problems such as sever back pain, difficulty in breathing, apparent deformity and cardiopulmonary compromise etc. Screening can identify children with scoliosis who are candidates for treatment which is effective, if started early.

Objective: To determine the frequency of scoliosis, effects of scoliosis on length and length of extremities of 1400 girls from secondary schools in Ahwaz city, Iran.

Methods: Sampling was carried out randomly and plumb-line, magic pen, ribbon meter and scale were used for measurement.

Results: The prevalence of scoliosis was 2% among the girls who were screened. Average length of healthy persons and victims was 152.2 and 152.1 cm respectively. Similarly, average weight of healthy persons and victims was 44.7 and 44.2 kg respectively.

1.9% of the candidates had 5-15 mm difference in the length of right and left upper extremities. Similarly, 2.28% of the candidates had 5-30 mm difference in lower extremities. Our results indicates that there was a significant relationship between the length of extremities and scoliosis among the healthy persons and victims($P<0.05$).

Conclusion: The correct diagnosis in early stages of adolescence for treatment can prevent the extent of progress of scoliosis.

KEYWORDS: scoliosis, girls, limb length, extremity, school screening.

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INTRODUCTION

In a lateral view of a radiography of vertebral column of an adult, cervical and lumbar curvature with anterior convexity, thoracic and sacral curvature with posterior convexity are seen to exist.¹ On the other hand, no lateral deviation can be detected in anteroposterior radiography in vertebral column. Any lateral deviation in any point of the vertebral column is known as scoliosis.^{2,3,4} Scoliosis is reported to usually cause unsuitable shape that accordingly affects the internal organs. It also affects the height, length of extremities and the arm span and this inevitably brings about asymmetry and deformity. In this study, our objective was to find out the prevalence of scoliosis within the subjects and its relationship with height and length of extremities in the study population.

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PATIENTS AND METHODS

We examined 1400 girl students between the ages of 11-15 residing in guidance schools of Ahwaz. Samples have been selected abiding by cluster and random procedure which can be categorically identified to serve as a cross-sectional type of research. The equipments used included plumb-line, magic pen, ribbon meter and a scale. The selected subjects were submitted to examination in standing position, forward and lateral bending. The spinous processes of each subject has been felt and marked and with the aid of plumb-line from occipital base to have the vertebral column checked. In the presence of balance, the plumb-line is seen to pass between the two gluteal region. Otherwise, a case of no balance is seen to exist. On having deviation laterally, a case of scoliosis is identified. In a second session, the subjects were required to straighten the knees and bend 90 degrees forward and then sideward. Accordingly, the presence of scoliosis and hump were detected. In a subsequent examination, the subjects height, length of upper and lower limbs were measured. The data obtained was analyzed manipulating SPSS statistical software and Chi-square test. Those who were identified to possibly suffer from scoliosis, were justifiably referred to orthopedist for extra check ups.

RESULTS

The prevalence of scoliosis in the candidates who were put to test has been no more than 2%. The average height of healthy subjects marked 152.2 cm. whereas the victims showed no more than 152.1 cm. The average weight of healthy subjects was 44.7 kg whereas the average of the victims was 44.2 kg. The relationship between the weight of healthy subjects and the victims was not found to be significantly meaningful. In the population in question, twenty seven persons displayed a difference in length between right and left upper limb. This difference has ranged between 5 to 15 mm. Eight persons among the 27 were identified to be the victims of scoliosis. Thirty two of them displayed a 5-30 mm difference in length between their right and left lower extremity. Four of them were seen to suffer from

scoliosis. The relationship between the victims and healthy subjects were found to be significantly meaningful.

DISCUSSION

The prevalence of scoliosis in girls between the ages of 11-15 has been 2% with a higher percentage if compared to studies done on boys.^{5,6} The average height in healthy subjects and the victims has been 152.2 and 152.1 cm which if compared to the studies done on boys shows a decline of 1-2 cm. In this study, a difference of 5-15 mm has been detected in length of right and left upper limb. Eight of them were seen to suffer from scoliosis which is similar to that of boys population (5). In the same study, girls showed a 5-30 mm difference in the left and right lower limb.⁷ Asymmetry in the length of the lower limb has been reported to exist in 4.8% showing a higher degree if compared to our findings. On having closely studied findings of this study we suggest that scoliosis screening should be initiated for juveniles and adolescents in all schools. Timely diagnosis and preventing its prevalence will lead to providing a healthy society. Prevention is also much cheaper than expensive treatment.

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