

Comparison of Body Faulty Posture Kyphosis Between Normal and Blind Children Aged Ten Thirteen and Fifteen



PHYSICAL EDUCATION

KEYWORDS : Blind, Normal, Posture, Kyphosis.

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ABSTRACT

The purpose of the study was to compare normal and blind children aged 10, 13, and 15 in body faulty posture kyphosis. To fulfill the study ninety boys from Alagappa University Model Higher Secondary School and seventeen school boys from T.E.L.C Blind School, Thirupattur were used. For the purpose of comparison both the groups were classified into various age categories. These various age categories were 10, 13 and 15. Comparison of normal and blind children on dependent variable was made between same age categories. Static group comparison was employed. The computed t-ratio was compared with the tabulate t-ratio at 0.05 alpha. It was found that at the age of 13 when compared to normal population the blind students are prone to lordosis postural deformity.

INTRODUCTION

A healthy posture is when all the joints are stacked up in optimal alignment, said Lisa Corrigan. Optimal alignment allows for normal curves of the spine:

- The cervical spine (neck) has an anterior (frontward) curve.
- The thoracic (chest) has posterior (toward the back of the body) curve.
- The lumbar (lower back) spine has anterior curve.

The ear should line up over the shoulder, which lines up over the hip; when one stand, those points should align over the ankle. When a body is in alignment, gravity is distributed evenly and with the least amount of strain on the body. (<http://www.therapeuticassociates.com/locations/oregon/central-oregon/bend/>)

SPINAL CURVATURE

This type of deformity is related to spine. This deformity is caused by carrying excessive weight beyond capacity. In another way we can say that weak muscles cause the formation of spine curvature. The normal lumbar spine is characterized by a moderate anterior hyperextension curve, when viewed laterally. Although there is absolute standard for the determination of the degree or extent of the anterior convexity of the normal lumbar curve, there are three types of spinal deformities:

- Kyphosis
- Lordosis
- Scoliosis
- Head Forward

KYPHOSIS

Kyphosis implies an increase or exaggeration of a backward or posterior curve or a decrease or reversal of a forward curve. It is also called round upper back. Depression of chest is common in kyphosis. (Medical Systems, 2005)

Causes of Lordosis

Kyphosis is caused by malnutrition, illness, crowd, deficiency of pure air, insufficient exercises, rickets, carrying heavy loads on shoulders, unsuitable furniture, weak muscles and habit of doing work by leaning forward.

Previous studies have shown that head posture is dependent on vision. The head posture of blind persons therefore can be expected to differ from that of normal subjects (Fjellvang, & Solow, 1986) Vision is one of the most important factors involved in the control of head posture. The different head posture in the blind group was produced by forward-downward tilting of the head and neck in combination with an unchanged craniocervical angulation.

In the blind group, the difference in head posture affected the

mandibular position so that the craniofacial and dentoalveolar morphology showed a difference: an increase in the mandibular angle and in vertical jaw relationships and at the same time a decrease in inclination of the mandibular incisors (Do an, Ertürk, 1990).

Body awareness and spatial understanding is naturally more for the normal people when compared with blind people. Hence the purpose of the study was to find out the postural deformities of normal students and blind aged 10, 13 and 15 year old students.

METHODOLOGY

To fulfill the purpose of the study ninety boys from Alagappa University Model Higher Secondary School and seventeen school boys from T.E.L.C Blind School, Thirupattur were used.

For the purpose of comparison both the groups were classified into various age categories. These various age categories were 10, 13 and 15. Comparison of normal and blind children on dependent variable was made between same age categories. Static group comparison was employed. The computed t-ratio was compared with the tabulate t-ratio at 0.05 alpha.

TOOLS

While testing the boys were asked to remove their shirts and be in shorts to facilitate diagnosis to assess the deformity. Deformity was assessed in comparison to ideal plumb alignment on side view and posterior view.

IDEAL PLUMB LINE ALIGNMENT: SIDE VIEW (Kendall et al., 1983)

Surface land mark which coincide with plumb line

Ear : Through the lobe of the ear
 Shoulder : Through the shoulder joint
 Trunk : Approximately midway through the trunk
 Hip : Approximately through the greater trochanter of the femur
 Knee : Slightly anterior to a midline through the knee
 Malleolus : Slightly anterior to the lateral malleolus

KYPHOSIS POSTURE DEFORMITY

Head : Forward
 Cervical Spine : Hyper extended
 Scapula : Adducted
 Thoracic spine : Increased flexion
 Pelvis : Anterior tilt
 Hip joint : Flexed
 Knee joint : Slightly hyper extended
 Ankle joint : Slightly plantar flexion because of the backward inclination of the leg

FINDINGS

The obtained percentage of occurrence of kyphosis between normal and blind children of 10, 13 and 15 are presented in table 1. The obtained 't' ratio are presented in table 2.

The obtained 't' ratio to test the difference between the percentage of occurrence of kyphosis posture among normal and blind boys aged 10 and 15 showed that there was significant difference at 0.05 alpha as the obtained 't' ratio (3.30) was more than the tabulated value (2.04 at 0.05 alpha, with degrees of freedom 39). There was no significant difference between normal and blind group children in the age group of 10 and 15 in lordosis.

Table 1
PERCENTAGE OF OCCURRENCE OF FAULTY POSTURE KYPHOSIS BETWEEN NORMAL AND BLIND CHILDREN OF 10, 13 AND 15 YEARS OLD ON PLUMB LINE TEST

Age	Subject No. Normal	Subject No. Blind	% of occurrence in normal	% of occurrence in normal
10	30	3	33.33	10
13	30	11	10	8.18
15	303	3	33.33	10

Table 2
PERCENTAGE OF OCCURRENCE OF FAULTY POSTURE KYPHOSIS AND 'T' RATIO BETWEEN NORMAL AND BLIND CHILDREN OF 10, 13 AND 15 YEARS OLD ON PLUMB LINE TEST

Age	Number of subjects	Groups	% of occurrence	t-ratio
10	30	Normal	33.33	3.30*
	3	Blind	10	
13	30	Normal	10	0.64
	11	Blind	8.18	
15	30	Normal	33.33	3.30*
	3	Blind	10	

CONCLUSION

It was concluded at the age of 13, 15 when compared to normal population the blind students are prone to kyphosis postural deformity, whereas no significant differences were observed in thirteen years of age category children on kyphosis between blind and normal children. The observations made in the blind students were only 3 in the age group of 10 and 15, whereas in 13 age year old category 11 observations were made. If more number of blind population were observed the result may be different. Hence to infer the finding more number of observations is recommended.

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