RESEARCH PAPER | PHYSICAL EDUCATION | Volume : 5 | Issue : 10 | October 2015 | ISSN - 2249-555X

Comparison of Faulty Body Posture Lordosis Between Normal and Blind Children Aged ten Thirteen and Fifteen

KEYWORDS: Blind, Normal, Posture, Lordosis

Dr.R.Arjunan

Associate Professor, Department of Physical Education and Health Sciences Alagappa University Karaikudi - 630004.

ABSTRACT *The purpose of the study was to compare normal and blind children aged 10, 13, and 15 in body faulty posture lordosis. To fulfill the study ninety boys from Alagappa University Model Higher Secondary Scholl 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 design was employed. The computed t-ratio was compared with the tabulated 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

LORDOSIS

Lordosis is the inward curvature of spine. In fact, it is an increased forward curve in the lumber region. It creates problem in standing and walking. The body seems to be stiff Medical Systems, 2005)

Causes of Lordosis

Generally imbalanced diet, improper environment improper development of muscles, obesity and diseases affecting vertebrae and spinal muscles are such causes which result in lordosis. In addition to these causes, not performing exercises and taking excessive food are also major causes of lordosis.

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 (Doğan, 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 Scholl 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 Lordosis was made between same age categories. Static group comparison was employed. The computed t-ratio was compared with the tabulated 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

Volume : 5 | Issue : 10 | October 2015 | ISSN - 2249-555X

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

LORDOSIS POSTURE DEFORMITY

Head : Forward
Cervical Spine : Hyper extended
Scapula : Adducted
Lumbar spine : Hyper extended
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 Lordosis 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 lordosis posture among normal and blind boys aged 13 showed that there was significant difference at 0.05 alpha as the obtained 't' ratio (3.63) 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 LORDOSIS 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 blind
10	30	3	16.67	33.33
13	30	11	Nil	54.53
15	303	3	10	33.33

Table 2
PERCENTAGE OF OCCURRENCE OF FAULTY POSTURE LORDOSIS 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	16.67	0.59
	3	Blind	33.33	
13	30	Normal	54.53	3.63*
	11	Blind	nil	
15	30	Normal	10	0.84
	3	Blind	33.33	

CONCLUSIONS

It was concluded at the age of 13 when compared to normal population the blind students are prone to lordosis postural deformity, whereas no significant differences were observed in ten and fifteen years of age category on lordosis 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 like that of the 13 year category.

REFERENCE 1. Fon GT, Pitt MJ, Thies AC. Thoracic kyphosis: range in normal subjects. Am J Roentgenol. 1980;134: 979–983 2. Voutsinas SA, MacEwan GD. Sagittal profiles of the spine. Clin Orthop. 1986;210:235–242. 3. Per Trobisch, Olaf Suess, Frank Schwab; Suess; Schwab (2010). "Idiopathic Scoliosis". Disch Arztebi Int. 107 (49): 875–884. PMID 21191550. 4. McAviney, Jeb (2015). "What is scoliosis". ScoliCare Australia. Retrieved 1 October 2015. 5. Medical Systems: A Body Systems Approach, 2005 6. Fjellvang, H., & Solow, B. (1986). Craniocervical postural relations and craniofacial morphology in 30 blind subjects. American Journal of Orthodontics and Dentofacial Orthopedics, 90(4), 327-334. 7. Do□an, S., & Ertürk, N. (1990). The effect of vision on craniocervical posture and its relation to craniofacial and dentoalveolar morphology. Quintessence International, 21(5). 8. Kendall, Florence Peterson, P.T. et al., (1983) Muscle Testing and function, (3rd edition), USA: Waverly Press.