



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

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 scoliosis. 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 scoliosis 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 15 when compared to normal population the blind children are prone to scoliosis postural deformity, whereas no significant differences were observed in ten and thirteen years of age category on scoliosis between blind and normal children.*

**KEYWORDS : Blind, Normal, Posture, Scoliosis, Children**

### 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 (forward) 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

### SCOLIOSIS

Postural adaptation of the spine in lateral position is called scoliosis. Scoliosis means bending, twisting or rotating. In fact, these are side-ways curves and may be called scoliotic curves. These are defined in terms of their convexities. They are identified as either convexity right or right convexity. A simple or single curve to the left or convexity left is commonly called a 'C' curve. Scoliotic curve may be found in 'S' shape. (Medical Systems, 2005)

#### Causes of scoliosis:

Scoliosis may be because of a lot of reasons but the main reasons are disease in the joints of bones, underdeveloped legs, infantile paralysis, rickets etc. It may also be due to carrying heavy weights on one shoulder, unhealthy conditions, like inadequate lightning arrangement, unsuitable desks, partial deafness and wrong standing posture. It may be caused by congenital or acquired abnormalities of vertebrae, muscles or nerves.

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 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

### 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.

### SCOLIOSIS POSTURE DEFORMITY

#### C-TYPE SCOLIOSIS (C-Curve)

The subjects has a left thorcolumbar curve with low right shoulder but without pelvic deviation or tilt

#### S-TYPE SCOLIOSIS (S-Curve)

This subject has a right thoracic, left lumbar curve. The shoulder level is good; there is no deviation of the pelvis in relation to the plumb line

### FINDINGS

The obtained percentage of occurrence of scoliosis 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 scoliosis posture among normal and blind boys aged 15 showed that there was significant difference at 0.05 alpha as the obtained 't' ratio (2.45) 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 13 in scoliosis.

**Table 1**  
**PERCENTAGE OF OCCURRENCE OF FAULTY POSTURE SCOLIOSIS 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	6.67	33.33
13	30	11	10	9.1
15	30	3	nil	16.67

**Table 2**  
**PERCENTAGE OF OCCURRENCE OF FAULTY POSTURE SCOLIOSIS 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	6.67	0.96
	3	Blind	33.33	
13	30	Normal	10	0.96
	11	Blind	9.1	
15	30	Normal	NIL	2.45*
	3	Blind	16.67	

### CONCLUSION

It was concluded at the age of 15 when compared to normal population the blind students are prone to scoliosis postural deformity, whereas no significant differences were observed in ten and thirteen years of age category on scoliosis 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 findings more number of observations is required.

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