A COMPARATIVE STUDY OF FOOT DEFORMITIES AMONG THE MALE SCHOOL CHILDREN OF GREATER AND INNER HIMALAYAN REGION

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ABSTRACT

Foot deformity is a term that includes a range of conditions that may affect the bones, tendons, and muscles of the foot. Among those most frequently found were knock knee and bow legs. Although these deformities can occur to all age group people but the children are most vulnerable to these deformities. Therefore, the purpose of the study was to compare the prevalence of foot deformities among the male school children of greater and inner himalayan regions. A total of 100 (50 from each region) school children in the age range of 10 – 15 yrs were selected as the sample of the study. The knock knee and bow legs were measured by measuring the intermalleolar and intercondylor distance respectively. To analyze the data multivariate analysis of variance was employed. Results of the study showed that there was a significant difference in the prevalence of knock knee and bow legs in greater and inner himalayan regions of Himachal Pradesh.

Key Words: Foot Deformity, Bow Leg, Knock Knee and Himalayan Regions.

INTRODUCTION:

A thorough study on the foot deformities among school children by various other research experts from different parts of worlds have said that almost all the children are born with some degree of leg deformity, especially the knock knee and bow legs. knock knee is a condition where the legs are bowed inwards in the standing position. Bow legs are is a condition where the legs are bowed outwards in the standing position. It has been found that these deformities remains up to the age of 7-8 years of the child and as the developmental stages passes of, the degree of these deformities also reduces and became negligible. Prevalence of these deformities may cause severe foot related problems that may lead to the functional disability.

METHODOLOGY:

Sampling: stratified sampling

A total of one hundred (50 from each region) school children from different parts of greater and inner himalayan region were selected as the sample for the study.

Criterion measures:

Knock knee was measured by measuring inter malleolar distance in centimeters. Bow leg was measured by measuring intercondylor distance in centimeters.

Scoring:

Anyone having more than 10 cms intermalleolar and intercondylor distance was considered as knock kneed and bow legged respectively.

Statistical test: One way MANOVA

RESULTS AND FINDINGS:

The results and findings of the study are as follows:

Table 1 shows the mean and standard deviation of the intermalleolar and intercondylor distance of all the samples selected for the study from different Greater Himalayan and inner Himalayan regions of Himachal Pradesh.

Table 1: Mean ±SD of the data obtained on the sample

	Regions	
	Greater himalayas	Inner himalayas
Knock Knee(in cms)	9.10±1.42	8.70±2.99
Bow Legs(in cms)	10.99±1.51	9.56±2.34

The above table show that the both intermalleolar and intercondylor distance varies more in greater Himalayas in comparison to Inner Himalayan region. Table 2 gives the MANOVA table.

Table 2: MANOVA table for the prevalence of knock knee and bow legs in different Himalayan regions

Effect		*Value*	*F*	*Hypothesis df*	*Error df*	*Sig.*
Region	Pillai's Trace	.128	7.093	2.000	97.000	.001

The significance of Pillai's trace test in the above MANOVA table shows that there is a significant difference in the prevalence of knock knee and bow legs among the school children of Greater and Inner himalayan regions. Hence, further ANOVA test was applied. Table 3 shows the ANOVA table.

Table 3: Anova table for the prevalence of knock knee and bow legs in different Himalayan regions

Dependent Variable		*Sum of Squares*	*df*	*Mean Square*	*F*	*Sig.*
Knock knee	Contrast	2.890	1	2.890	.525	.471
	Error	539.620	98	5.506		
Bow legs	Contrast	51.122	1	51.122	13.199	.000*
	Error	379.565	98	3.873		

*Significant at 5 % level

$F_{0.5}(1, 98) = 3.94$

The above table that there is no significant difference in the prevalence of knock knee among the school children of greater and Inner himalayan region. Whereas there is a significant difference in the prevalence of bow legs among the children of Greater and Inner himalayan region.

DISCUSSION OF FINDINGS AND CONCLUSION:

The present study has revealed that the status of bow legs is significantly higher among the different regions of himachal Pradesh. This result can be supported with table no 1 which shows that the mean difference of bow legs is more than the mean difference of knock knee among the school children of greater and inner himalayan region of Himachal Pradesh. The most probable reason behind these results might be the geographical conditions of Himachal Pradesh which forces their

children to walk on uneven non metallic roads, that leads to foot deformities especially bow legs. Apart from this the other reasons might be lack of nutrition and unawareness among the people.

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