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CORRELATION BETWEEN CORE MUSCLE ENDURANCE AND FOOT POSTURE IN COLLEGE GOING STUDENTS: AN OBSERVATIONAL STUDY

Physiotherapy

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ABSTRACT

Background: Proper posture is considered to be a state of musculoskeletal balance that involves A minimal amount of Stress or strain to the body.it Compromises balance because of muscular Imbalance which can cause loss Of Proprioception sense in joint and decreased Balance, and trunk endurance is significantly Reduced in Reduced in forward head posture and may lead to poor muscular Control of the spine. **Aim:** To Determine the Correlation between core muscle endurance and foot posture in college Going Students. **Methodology:** An observational study Was conducted in 50 College Going Students of Ahmedabad and Convient Sampling was used. Age group 18-25 Year students Chek for Core Muscle Endurance Test and Foot Posture Analysis. The statistical evaluation become accomplished with SPSS version 29-2022, September. **Result:** Our Finding Suggest that from Descriptive analysis of data was expressed in mean and Standard Deviation for various parameters. Correlation were expressed in term of R value and P Value. P value less than 0.05 was considered to be Signifcant. **Conclusion:** Individuals with altered foot posture will have an effect on the Proximal segment through the Kinetic chain phenomenon of the body, Affecting the core endurance. Individuals with altered Foot posture have reduced core endurance.

KEYWORDS

Core Muscle,Foot Posture,College Students,Endurance

INTRODUCTION

Foot posture plays an important role in the quality of daily living.[1]The structure of the feet is such that it permits the functions of both the stability and the mobility depending on the tasks which are imposed on it.[1]

Kinetic Chain & Core

Core stability can be defined as the ability of the Lumbopelvic-Hip Complex to prevent buckling of the Vertebral Column and return it to equilibrium following perturbation by using Strength, Endurance and Motor Control in a functional manner through all the planes of motion and action despite changes in the center of gravity.[2]

Need Of Study:

1)The foot posture is important for provide stable base of support during walking, running and jumping.
2)Proximal stability is needed for distal mobility.
3)So the core provide proximal stability to perform proper distal component mobility. The affection in
4)proximal core muscle may be lead to distal component changes and visa versa.

Aims Of The Study:

To find out the Correlation between core muscle endurance and foot posture in college Going students.

OBJECTIVES:

1)To find out the Correlation between core muscle endurance and foot posture in college going students by using Flexor endurance test & FPI.
2)To find out the Correlation between core muscle endurance and foot posture in college going students by using Extensor endurance test & FPI.
3)To find out the Correlation between core muscle endurance and foot posture in college going students by using Rt. Side plank endurance test & FPI.
4)To find out the Correlation between core muscle endurance and foot posture in college going students by using Lt. Side plank endurance test & FPI.

Null hypothesis:

There is no significant Correlation between core muscle endurance and foot posture in college going students.

Alternate Hypothesis:

There is significant Correlation between core muscle endurance and foot posture in college going students. and foot posture in college going students.

MATERIAL

Pen, paper, pencil
Foot posture index questionnaire
Stop watch
Plinth or high level bed

METHODOLOGY

Sample Size: 50

Sampling Design : Convient sampling

Study Design: An observational study

Setting: Ahmedabad

Population: Age group between 18 to 25 years

Procedure

- Selection
- Fifty subjects with the age group between 18 to 25 years participate in this study.
- Core Endurance :
- 60 degree flexion endurance test,
- trunk extensor endurance test,
- Right side plank test
- left side plank test.
- Time noted in sec.
- Foot posture:
- Foot posture index.

Flexor Endurance Test Position

Extensor Endurance Test Position

Lt. & Rt. Side Plank Endurance Test Position

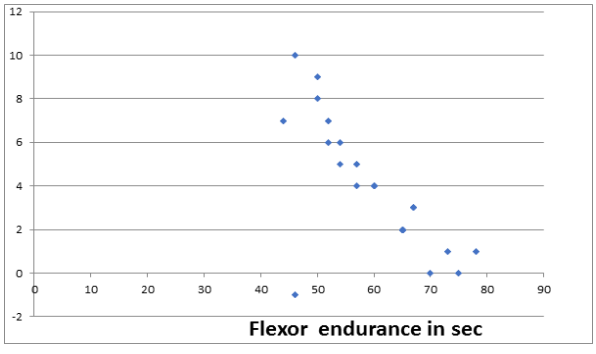
RESULTS

Descriptive analysis of data was expressed in mean and standard deviation for various parameters.Correlation were expressed in term of r value and P value.P value less than 0.05 was considered to be significant

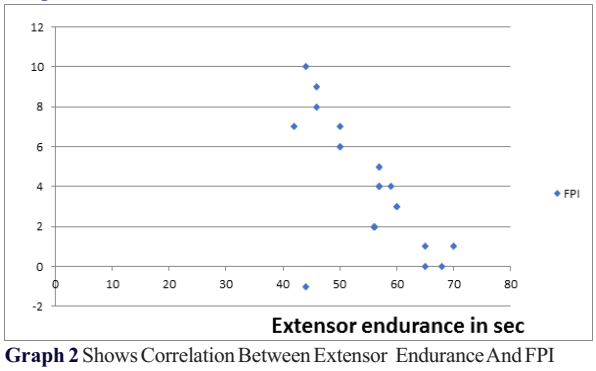
The graphical representation was done by scatter graph.

Table 1 : Descriptive Analysis

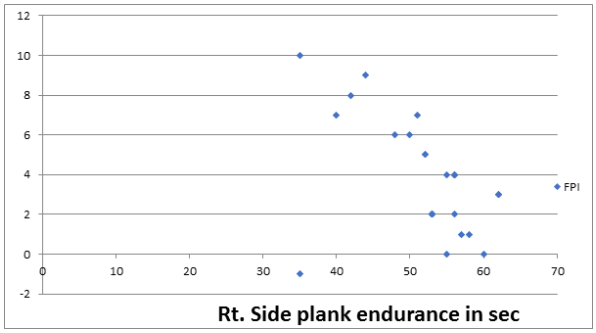
	MEAN	STANDARD DEVIATION
Age	22.34	1.7333
Flexor endurance test	60.1	9.2609
Extensor endurance test	55.34	7.3640
Rt. Side plank test	51.78	7.3326
Lt. side plank test	49.08	6.7698
Foot posture Index	3.78	2.8734



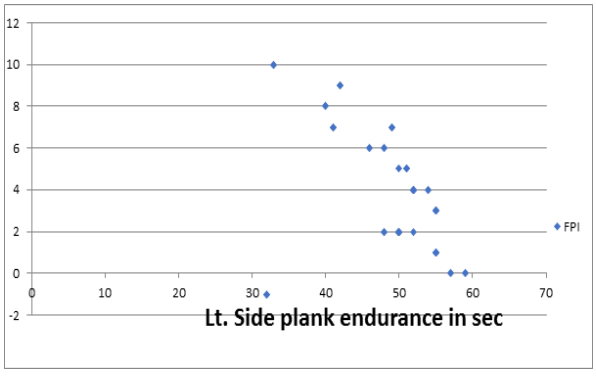
Graph 1 Shows Correlation Between Flexor Endurance And FPI



Graph 2 Shows Correlation Between Extensor Endurance And FPI



Graph 3 Shows Correlation Between Rt. Side Plank Endurance And FPI



Graph 4 Shows Correlation Between Lt. Side Plank Endurance And FPI

Table 2: Correlation Between Core Endurance & Foot Posture

Variables	r value	P value	
Flexor endurance test & FPI	-0.7231	0.04	significant
Extensor endurance test & FPI	-0.6734	0.03	significant
Rt. Side plank test & FPI	-0.5098	0.005	significant
Lt. side plank test & FPI	-0.5037	0.005	significant

RESULTS

Result shows there is a negative correlation between core endurance timing and foot posture index scoring.

DISCUSSION

The Purpose Of the Study find out correlation between core muscle endurance and foot posture in college going students. The Presents Study Suggest that changes in foot posture causes changes in the kinetic chain of the entire lower extremity upto the lumbar, pelvic and the hip region. Dr. Anvita Telang at el, Conducted study on Comparison of Core Stability in Individuals with Flexible Flat Foot and Normal Foot and conclude that Individuals with flexible flat foot have reduced core Stability.[3] Statistical significance was considered when p value was less than 0.05. The results from statistical analysis of the present study rejects the null hypothesis. There was an significant difference in Core muscle endurance in individuals with different foot posture in the age group of 18- 25 years. The reasons to the above findings are- changes in foot posture causes changes in the kinetic chain of the entire lower extremity upto the lumbar, pelvic and the hip region.

CONCLUSION

Individuals with altered foot posture will have an effect on the proximal segment through the kinetic chain phenomenon of the body, affecting the core endurance.

Individuals with altered foot posture have reduced core endurance.

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