

Study of the Effect of Proprioceptive Neuromuscular Facilitation (PNF) Technique and Surya Namaskar Training on Flexibility

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Abstract: The purpose of this research study was to study the effect of Proprioceptive Neuromuscular Facilitation (PNF) technique and Surya Namaskar training on flexibility. This research study was limited to high school students. In this research study, students in the age group of 14 to 17 years were selected as subjects through random sampling method. A total of 60 students were selected in this research study. In this research study, 20 students were divided into three groups namely Proprioceptive Neuromuscular Facilitation (PNF) technique group-A, 20 students Surya Namaskar group-B and 20 students in group-C control group. In the measurement standard, flexibility was measured by sit and reach test. To find out the effects on the Proprioceptive Neuromuscular Facilitation (PNF) technique training group and the Suryanamaskar training group, one-way analysis of covariance test was applied and the differences between the means were tested for significance at the 0.05 level using the Least Significant Difference Post Hoc test. The conclusion was as follows. A significant improvement was observed in the flexibility of the subjects selected from the 12-week Proprioceptive Neuromuscular Facilitation training and Suryanamaskar training program.

Key Words: Surya Namaskar, Proprioceptive Neuromuscular Facilitation (PNF).

1. INTRODUCTION :

When PNF is performed before exercise, it reduces the impact of maximal effort exercises. When this stretching technique is performed continuously and after exercise, it enhances athletic performance along with range of motion. There are four theoretical physiological mechanisms that contribute to PNF increasing ROM. These are autogenic inhibition, reciprocal inhibition, tension relaxation, and gate control principles.

Surya Namaskar is very beneficial. Its regular practice provides relief from pain in the hands and feet. The muscles of the throat, lungs and ribs are strengthened and useless fat is eliminated from the body. Surya Namaskar cures skin diseases. Its practice provides relief from constipation and stomach pain and strengthens the digestive system. Regular practice of this asana provides relief from all the minor and major nerve and muscle problems of the body. It removes laziness, insomnia and other disorders.

“Physical health is the greatest asset of a person. It cannot be bought, but can be acquired through daily practice.

Physically healthy citizens are the permanent assets of a country. Weak citizens are the temporary assets of a country. Therefore, it is the responsibility of every country to provide its citizens with the physical health that is essential and indispensable for their daily life activities.

The World Health Organization also aims to make every citizen aware of good health and that it is a good alchemy to gain strength. The Inter Olympic Committee has also joined hands with the World Health Organization for Health for All. To fulfill this goal, scientific programs and standards should be prepared for every citizen, that is, for people of all ages.

2. THE PURPOSE OF THE STUDY :

The purpose of this research study was to study the effect of proprioceptive neuromuscular facilitation (PNF) technique and Surya Namaskar training on flexibility.

3. SELECTION OF THE SUBJECT :

This research study was limited to high school students. In this research study, students in the age group of 14 to 17 years were selected as subjects through random sampling method. A total of 60 students were selected in this

research study. In this research study, 20 students were divided into three groups: Proprioceptive Neuromuscular Facilitation (PNF) technique group-A, 20 students in Surya Namaskar group-B and 20 students in control group-C.

4.CRITERION MEASUREMENT :

Sl.	Variable	Test	Measurement
1	Flexibility	Sit and Reach	Centimeter

5.STATISTICAL PROCESSING :

To determine the effects of Proprioceptive Neuromuscular Facilitation (PNF) technique training group and Suryanamaskar training group, one-way analysis of covariance test was applied and the differences between the means were tested for significance at the 0.05 level using the Least Significant Difference Post Hoc test.

6.RESULT OF THE STUDY :

Table-1

Covariance analysis of two experimental and one control group of flexibility test performance

Test	Group			Variation covariance analysis				
	Proprioceptive Neuromuscular Facilitation Training	Surya Namaskar Training	Controlled	Sum of square (SS)		Degree freedom (df)	Mean sum of square (MSS)	F
Per test Mean	14.650	14.050	14.700	A	5.233	2	2.617	0.424
				W	351.700	57	6.170	
Post test Mean	21.350	20.250	14.550	A	532.933	2	266.467	30.669*
				W	495.250	57	8.689	
Adjusted Mean	21.237	20.508	14.406	A	560.981	2	280.491	43.542*
				W	360.743	56	6.442	

*Significance level 'F' = 0.05 (2, 57) = 3.159 & (2, 56) = 3.162 at 0.05 level

In the above table - 1, the 'F' ratio of the pre-test medians of the flexibility test performance was found to be 0.424. Comparing it with the table value (3.159) it was not found to be significant at the 0.05 level. The 'F' ratio of the final test medians of the three groups was found to be 30.669. Comparing it with the table value (3.159) it was found to be significant at the 0.05 level. Therefore, the training provided proved to have significantly improved the performance of the subjects. In addition, the 'F' ratio of the improved medians was found to be 43.542. Comparing it with the table value (3.162) it was found to be significant at the 0.05 level.

Table- 2

Table showing the critical difference between the means of two experimental and one control group in the performance of a flexibility test.

Mean			Mean Different	Critical Different
Proprioceptive Neuromuscular Facilitation Training	Surya Namaskar Training	Controlled		
21.237	20.508		0.729	1.608
21.237		14.406	6.831*	
	20.508	14.406	6.102*	

*Sig.Level at 0.05

In the above table - 2, the Proprioceptive Neuromuscular Facilitation Training Group showed a very significant (6.831) improvement. Then the Suryanamaskar Training Group showed an improvement at the level of (6.102). The training given to the Proprioceptive Neuromuscular Facilitation Training Group was more significant in the

experimental fitness of the Proprioceptive Neuromuscular Facilitation Training Group and the Suryanamaskar Training Group. In comparison to the control group, the significant effect of experimental fitness was seen in both the experimental groups Proprioceptive Neuromuscular Facilitation Training Group and the Suryanamaskar Training Group. There was no significant effect of experimental fitness between the two experimental groups. But the effect of experimental fitness was seen on both the experimental groups compared to the control group.

7.CONCLUSION :

A 12-week Proprioceptive Neuromuscular Facilitation Training and Suryanamaskar training program of Systematic showed significant improvement in the flexibility of selected subjects.

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