

EFFECT OF PROPRIOCEPTIVE NEUROMUSCULAR FACILITATION ON LOWER BACK FLEXIBILITY OF MALE SCHOOL STUDENTS OF GWALIOR

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ABSTRACT

Proprioceptive Neuromuscular facilitation (PNF) is a technique of combining passive stretching and isometric stretching. The study was conducted to see the effect of PNF on flexibility of male school students. It was hypothesized that there will be significant increase of flexibility in male schools students. The samples for the study had been randomly selected, 60 male school students studying in KV NO :1, Gwalior were selected as subjects for the study and were divide into two groups (30 control group, 30 treatment group). To measure the lower back flexibility flexomeasure (sit and reach test) was used. The statistical technique used to analyse the score was ANCOVA, and it could be successfully determined from the result that there was a significant effect of PNF on flexibility of male school students i.e. There was a significant increase in the flexibility of male school students.

Key words: Proprioceptive Neuromuscular facilitation (PNF)

INTRODUCTION:

PNF is a advanced form of flexibility training that involved both stretching and contraction of the muscle group being targeted. PNF involves the use of muscle contraction before the stretch. It is currently the fastest and most effective way known to increase static passive flexibility, and is a technique of combining passive stretching and isometric stretching in order to achieve maximum static flexibility. Youdas JW et.al. (2009) conducted a study to see the efficacy of two modified proprioceptive neuromuscular facilitation stretching technique in subjects with reduced hamstring muscle length and the result significantly enabled to determine the significant increase in knee extension angle. Cornelius WL, et.al. (1992) also conducted a study to determine the

effect of modified PNF flexibility techniques on hip flexion in college males. Modified PNF techniques resulted in greater ROM.

METHOD:

The study was conducted to see the effect of PNF on lower back flexibility of male school students. Based on literature it was hypothesized that there will be a significant effect of PNF on flexibility of lower back. 60 male students of KV No :1 Gwalior were randomly selected as subjects for the study and were divided into two groups (30 control group, 30 treatment group). These subjects were made to undergo a six week PNF training. Pretest data were collected before the administration of training schedule and post test data were collected after the administration of the training. For the measurement of flexibility sit and reach test was used. The statistical technique used to analyse the pre-test and post test score was ANCOVA.

RESULT:

For testing the difference between mean the level of significance was set at .05 levels. The mean and SD are of pre-test and post test are presented in the tables.

Table 1. Descriptive statistics of pre-test of performance of experimental group and control group

Group	Pretest mean	Std. Deviation	N
Experimental group	9.0734	2.16	30
Control group	7.4	2.29	30

The table no. 1 displays the mean and standard deviation of both the groups in respect to their flexibility. The mean and SD of flexibility of experimental group are 9.07 ± 2.16 , whereas for control group, the mean and SD are 7.4 ± 2.29 respectively.

Table 2. Descriptive statistics of post test performance of experimental and control group

Group	Post-test mean	Std.Deviation	N
Experimental group	12.03	1.64	30
Control group	7.46	2.27	30

The table no.2 displays the mean and SD of both the groups in respect to their flexibility. The mean and SD of experimental group are 12.03 ± 1.64 , whereas for control group are 7.46 ± 2.27 respectively.

Table 3. ANCOVA TABLE

Source of variation	Sum of squares	Df	Mean square	F	Sig.
Treatment	132.646	1	132.646	266.73*	.000
Error	28.347	57	.497		

*Significant at .05 level

The univariate test of the group was done in the dependent variable separately and the result found is displayed in the above table. In group, cal 'F' value i.e. 266.73 was found to be greater than the tab. value at 1, 57 df. Hence in flexibility, the experimental and control; group were significantly different.

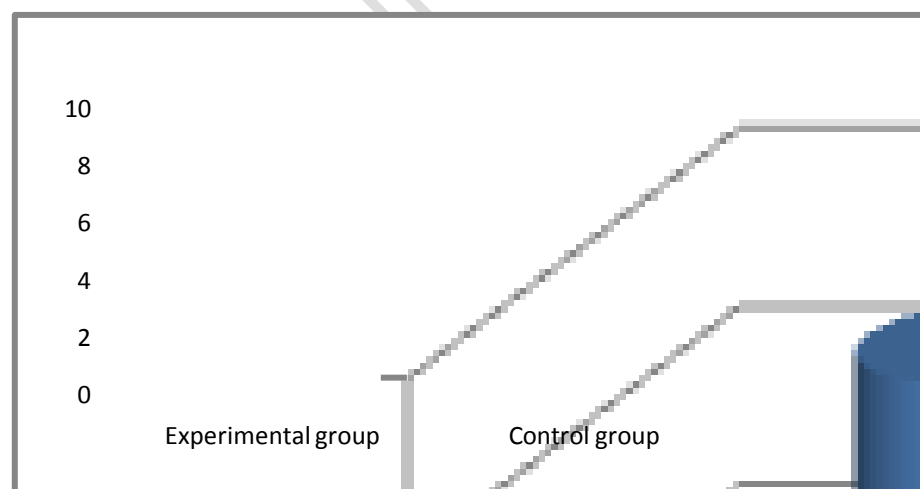
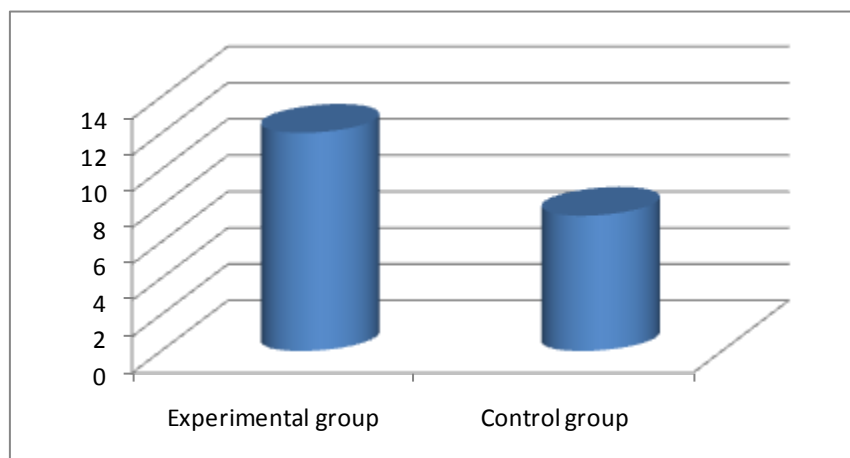


FIGURE: 1 PRE-TEST MEAN

**FIGURE: 2 POST-TEST MEAN****DISCUSSION AND FINDINGS:**

The analysis of data reveals that there is a significant difference between the pre-test and post test of experimental group in relation to flexibility as the F value 266.73 was found to be greater than the tab. value at 1, 57 df. O' Hora J, et.al. (2010) investigated the efficacy of several repetitions of PNF and static stretching on hamstring length after a single session. A significant increase in knee extension was found for both intervention groups after a single stretch. The PNF group demonstrated significantly greater gains in knee extension compared to the static stretching group.

CONCLUSION:

Based on the literature and present findings of the study following conclusions were finally drawn:

1. PNF stretching has significant relationship with flexibility.
2. Findings of the study seem to indicate that there were no significant difference on flexibility among the control group.
3. From the findings and data analysis it can be concluded that there had been an effect of PNF on flexibility of the experimental group.

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