International Journal of Physiology, Nutrition and Physical Education

Venaktesha
Research Scholar, Department of Physical Education, Bangalore University Bangalore, Karnataka, India

Dr. PC Krishnaswamy
Professor, Department of Physical Education, Bangalore University, Bangalore, Karnataka, India

A study on flexibility variable of bio-motor ability among national level kho-kho players

Venaktesha and Dr. PC Krishnaswamy

Abstract
The purpose the study was to compare the bio-motor ability of national level kho-kho players between selected states. A samples of 60 male kho-kho senior national kho-kho players was selected from Andhra Pradesh, Karnataka, Kerala, Tamil Nadu and Telangana. The flexibility of subjects was measured by sit and reach test. Collected data were analysed by computing the 'ANOVA' test to know the significance mean difference between National level kho-kho players in selected states on bio-motor abilities. The result indicated that there was significance with regard to bio-motor ability of flexibility between kho-kho players in selected states. The outcome of study might helps to coaches and physical education for increasing performance of sports players.

Keywords: Andhra Pradesh, Karnataka, Kerala, Tamil Nadu and Telangana

Introduction
The law specificity states that there is a particular response to the particular nature training load. This specific response will tend to emphasis one or more of the abilities that make up fitness. These abilities are basic and respond well to training. Since these abilities affect how the body moves they are given name bio-motor abilities. The bio-motor abilities defined as the ability to execute different activities for speed, endurance, flexibility, strength, coordination etc…

Kho- kho is one of the domestic game in India, Kho-kho has playing through the chasing and running(dodging) and the kho-kho game can be said to be the root of all game because it involves bio-motor abilities (speed, explosive strength, agility, flexibility, endurance, reaction ability etc…) which are essential for other sports. The well kho-kho players can be easily involves his body to other games.

Flexibility is the one of the importance aspects of bio-motor ability, flexibility defined as the capacity of a joint or muscle to move through its full range of motion. It is essential elements of kho- kho game and other sports also. We can see certain important skills kho-kho such as giving kho-kho, pole dive and heel tap and other skill. Without flexibility players cant execute these skills properly, example the chaser wants give kho speedily to his team players, he wants stretch his leg and hand with forward movement and touch his team mates and he wants give kho, so here the flexibility helps to chaser to give kho speedily from the away. And also flexibility avoids injuries while playing game.

Objectives of the Study
➢ To know the overall analysis of Flexibility variable of bio-motor abilities among national level kho-kho players in selected states.
➢ To compare the Flexibility variable among National level kho-kho players in selected states.

Hypothesis
➢ There would be a no significance difference in Flexibility variable among national level Kho-Kho players.

Correspondence
Venaktesha
Research Scholar, Department of Physical Education, Bangalore University Bangalore, Karnataka, India

Significance of the Study

➢ This study will helpful for counselling about flexibility of bio-motor abilities of kho-kho players
➢ This study will lead important training guidance for improving the performance of kho-kho players.

Methodology

To achieve the purpose of this study, sixty (60) men national level kho-kho players were selected from various selected states in south India (Andhra Pradesh, Karnataka, Kerala, Tamil Nadu and Telangana). Each state total 12 subject were selected from those who were participated in senior national championships. For this study Flexibility variable was selected and it was assed by sit and reach test. The statistical technique ANNOVA test followed by Bonferroni post hoc test was applied with the help of SPSS software, for testing hypothesis, the level of significant chosen was 0.05.

Result and Interpretation

Table 1: Descriptive statistics for Flexibility of National level Kho-kho players of selected states.

States	N	Mean	Std. Deviation	Std. Error	Minimum	Maximum
Andhra Pradesh	12	6.875	4.964	1.433	1.00	15.00
Karnataka	12	9.083	4.981	1.437	3.00	17.00
Kerala	12	8.083	5.103	1.473	1.00	16.00
Tamil Nadu	12	3.716	3.372	0.973	1.00	10.60
Telangana	12	13.000	6.123	1.767	2.00	23.00

Interpretation: Table 1 Showed that mean and standard deviation of Flexibility for selected states since the calculated values of Andhra Pradesh 6.875±4.964, Karnataka 9.083±.4.981, Kerala 8.083±.5.103, Tamil Nadu 3.716±3.372 and Telangana 13.000± 6.123. Further the minimum and maximum scores for Andhra Pradesh (1.00 &15.00), Karnataka (3.00 &17.00), Kerala (1.00 & 16.00), Tamil Nadu (1.00 & 10.60) and Telangana (2.00 & 23.00). The standard error of all state was 1.433, 1.437, 1.473, 0.973and 1.767respectively.
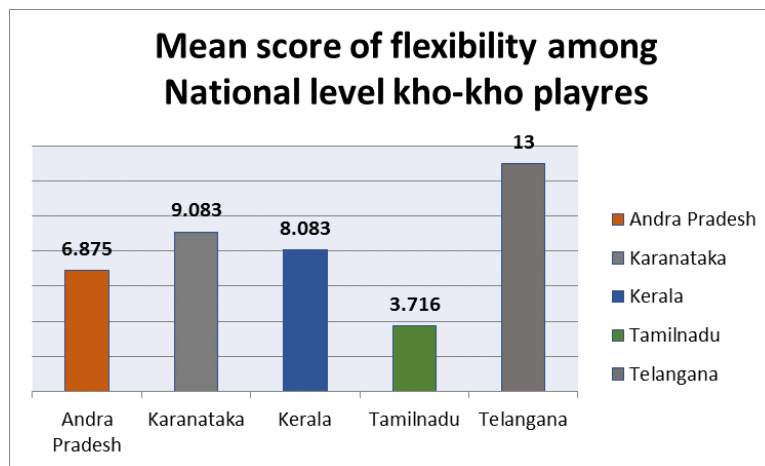
Fig 1: Graphical representation of mean values of flexibility among national level kho-kho players.

Table 2: ANNOVA result on flexibility among National level kho-kho players in selected states

Source	Dependent Variable	Sum of Squares	Df	Mean Square	F	p-value
States	Flexibility	548.137	4	137.034	5.509	0.001*

*Significance at 0.05 level
(Table Value for 0.05 level for df 4 & 55 =2.53)

Table 2 reveals that there is significance deference in flexibility variable between the selected states. The calculated f value 5.509 > Table value 2.53 and p-value 0.001* < 0.05 at 5% level of significance, therefore we reject hypothesis.

Table 2: Result of Bonferroni Post hoc test procedure for Flexibility: Comparison between the States.

Mean value					Mean difference	Sig
Andhra Pradesh	Karnataka	Kerala	Tamil Nadu	Telangana		
6.88	9.08				-2.210	1.000
6.88		8.08			1.210	1.000
6.88			3.72		3.160	1.000
6.88				13.00	-6.120	0.040*
	9.08	8.08			1.000	1.000
	9.08		3.72		5.370	0.109
	9.08			13.00	-3.920	0.596
		8.08	3.72		4.370	0.364
		8.08		13.00	-4.920	0.191
			3.72	13.00	-9.280	0.000*

*Significant at 0.05 level.

Inference: The results presented in the table 2 revealed that there was significant difference existed between Andhra Pradesh and Telangana in the flexibility. The calculated Mean difference -6.120, p value < 0.05 significant level and Significant difference existed between Tamil Nadu and Telangana the computed mean difference -9.280 and p-value < 0.05 level of significant). Therefore we reject the hypothesis.

There was no significant difference between Andhra Pradesh Compared with Karnataka, Kerala and Tamil Nadu the estimated MD=-2.210, 1.210, 3.160 and p-value 1.000 >0.05 level of significant. Secondly the Karnataka compared with Kerala, Tamil Nadu, Telangana (MD= 1.000, 5.370, -3.920 and p-value 1.000, 0.109, 0.596 > 0.05 level of significant. Finally the Kerala compared with Tamil Nadu and Telangana the appraised mean difference 4.370, -4.920 and p-value 0.364 and 0.191 > 0.05 level of significant. Therefore we accept hypothesis.

Discussion

It is evident from above findings that significant difference were found with regard to selected Bio-motor variable i.e. Flexibility between national level kho-kho players in different states. The outcome of the result might be due to different training methods and also a nature of their physical structure in selected states.

Conclusion

The result of the study showed that it is concluded that the flexibility was differ from one state to other state. The Telangana national level kho-kho players better than the Andhra Pradesh, Karantaka, Kerala and Tamil Nadu in Flexibility. And other hand Tamil Nadu kho-kho players had a lowest flexibility compared to other selected states. Finally I conclude those state had lower flexibility; they have to improve flexibility from using different training method for their best performance and avoiding the injuries while playing sports.

References

1. Singh PP. Comparisons and relationship of selected motor fitness components between kho-kho and kabaddi players, Unpublished Master Thesis, Gwalior, Lnipe, 1985.
2. Wazir Singh Phogat, Dr. Ravinder Pal Ahlawat, Relationship of selected Bio-motor variable to the performance of 400 meter male sprinter. International journal of Physical education, sports and health, 2015, 46-48.
3. Nithin Rajan, Ahmed Faiz PA. Plyometric training on selected bio-motor abilities of basket ball players". International journal of Physical education, sports and health. 2018; 3(1):1296-1299.
4. Singh Bhupinder, Saini Sonia. Bio motor abilities between Runner and Chaser of Kho-Kho: A comparative Study, Research journal of physical education science. 2014; 2(9):5-8.