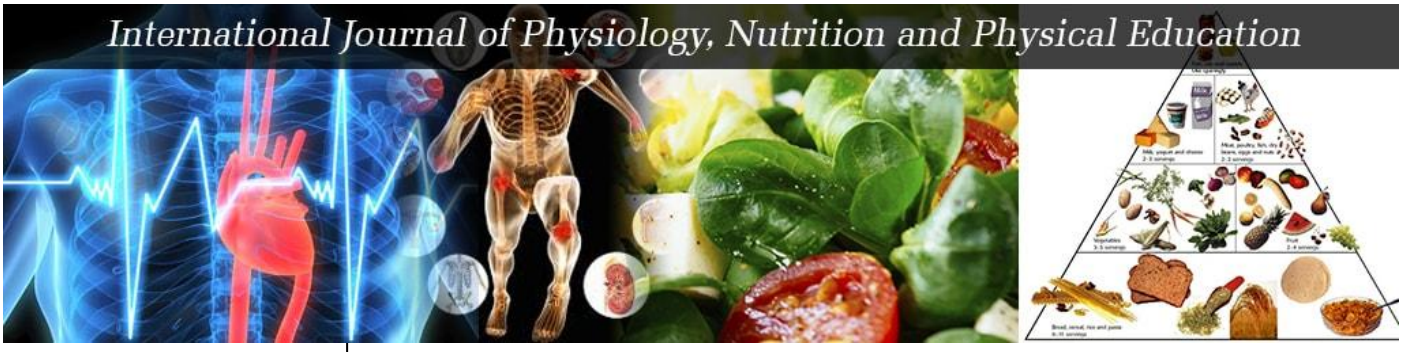

ISSN: 2456-0057
IJPNPE 2018; 3(1): 2154-2156

www.journalofsports.com
Received: 18-03-2018
Accepted: 23-04-2018

Dr. K Shanthi
Ph.D. Deputy Director
Department of Physical Education, Madras Veterinary College, Tamil Nadu Veterinary and Animal Sciences University, Chennai, Tamil Nadu, India

Correspondence
Dr. K Shanthi
Ph.D. Deputy Director
Department of Physical Education, Madras Veterinary College, Tamil Nadu Veterinary and Animal Sciences University, Chennai, Tamil Nadu, India

Comparison of horizontal explosive power among inter district level hockey players

Dr. K Shanthi

Abstract
The aim of the study was to compare the capacity of horizontal explosive power among Inter District level Hockey players. To achieve the purpose of the study sixty junior boys hockey players (N=60) who have attained first four positions in the 7th Inter District Junior Hockey Championship-2018 held at Madras Veterinary College, Chennai. The first four qualified teams were Trichy District(winner), Ariyalur District (Runner), Ramnad District (Third position) and Dindigul District (Fourth position).The age of the players ranged between 12-14 years. The selected teams were considered as Independent variables. The horizontal explosive power was chosen as dependent variable. The standing broad jump test was administered to examine the horizontal explosive power performance and final scores were recorded in meters. The one way analysis of variance (ANOVA) was used to find out the significant differences, if any, among the four teams. The level of significance was set at 0.05 level of confidence for observe the significant difference. The results of the study has shown that there was a significant difference on the performance of horizontal explosive power among the four teams.

Keywords: 1. Inter district, 2. junior boys, 3. explosive power, 4. hockey, 5. Anova

Introduction
Physical fitness is the ability to perform daily task with energy and enjoy leisure time pursuits and to meet the unpredicted emergencies. Physical fitness is defined as a set of ability to carry out physical ability. Regular physical exercise is an important part to remain fit and active in the long run and we also feel better. Exercise can help you to remove some diseases like diabetes, prevention of cancer and heart problems (Rao, 2010) [3]. Hockey is referred to as intermittent sports due to the pattern of repeated short bursts of high intensity activity interspersed with active and passive recovery. Such a pattern requires lactate removal and rapid regeneration of Phosphocreatine (PCr) stores to allow for sustained performance.
Muscle strength is relevant to striking the ball and to tackling and tolerating physical impacts with other players. Anaerobic power is also important in accelerating the body during short movements and changing direction quickly. Players who can sustain a high work-rate throughout a match gain an advantage over equally skilled players, whose energy can approach depletion towards the end of a game or after a series of high intensity efforts, resulting in reduced performance (Reilly, *et al*., 2000) [4]. A power, which allows the players to recover between shifts, is a necessary universal trait to compete at elite level. Power is needed to transfer the most possible force from the stick to the ball. Thus the current study is made an effort to find out the comparison of horizontal explosive power among inter district hockey players.

Materials and Methods
Experimental Design
The purposive random group design was used to find out the performance of explosive power horizontal ability among the inter district hockey players. The independent variables, Tricky District (winner), Ariyalur District (runner), Ramnad District (third place) and Dindigul District (fourth). The performance of horizontal explosive power was chosen as criterion variable.

Participants

Sixty junior boys hockey players (N=60) who entered first four places in the 7th inter district junior hockey championship - 2018 held at Chennai. The district teams were Trichy, Ariyalur, Ramnad and Dindigul.

Testing Procedure

The performance of horizontal explosive power of all the players were tested by, standing broad jump test, and the players' performance were recorded in meters.

Data Analysis

The one way analysis of variance (ANOVA) was applied to find out any significant difference among the selected teams on the performance of horizontal explosive power. The 0.05 level of confidence was fixed to test the significance difference among the groups.

Table 1: The Computation of Analysis of Variance on Explosive Power-Horizontal Ability among the Four Teams (Performance in meters)

Variable	Mean				Source of Variance	Sum of Square	Mean Square	Obtained 'F' value
	G1 (Winner)	G2 (Runner)	G3 (Third Position)	G4 (Fourth Position)				
Explosive power-Horizontal ability	2.02	1.87	1.79	1.72	Between	0.7	0.234	13.16*
					Within	0.99	0.01	

The Table-I shows the analysis of variance on capacity of explosive power-horizontal ability among the four teams. The mean value on explosive power-horizontal ability of group-1 (winner) was 2.02, group-2 (runner) 1.87, group-3 (third place) was 1.79 and group-4 (fourth place) was 1.72. It can be seen from table-1 the significant differences were found with regard to explosive power- horizontal ability among four district teams. Since the obtained 'F' ratio 13.16 was greater than the required table 'F' value 2.77. Therefore, the four teams were found to be significant at 0.05 level of confidence for the degrees of freedom 3 and 56.

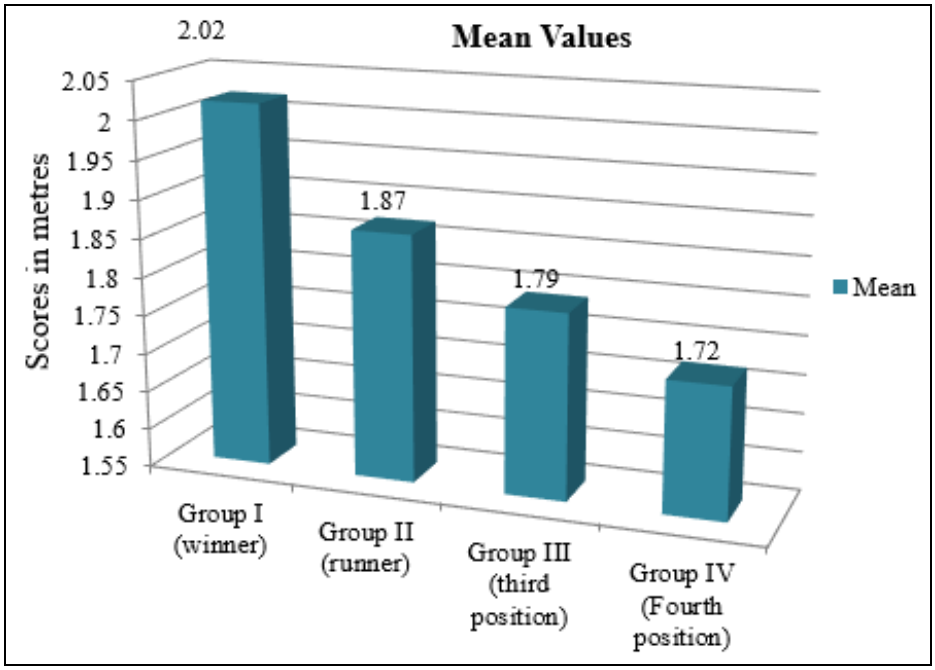

Fig 1: Mean Values On-Horizontal Explosive Power among Four Teams

Table 2: Scheffe's Post Hoc Test Paired Mean Differences on Explosive Power-Horizontal Ability among Four Teams (Performance in meters)

Comparisons		Mean Difference	CI Value
G1 (Winner) (2.02)	G2(Runner) (1.87)	0.14	0.14
	G3 (Third position) (1.79)	0.22*	
	G4 (Fourth position) (1.72)	0.29*	
G2 (Runner) (1.87)	G3(Third Position) (1.79)	0.08	
	G4 (Fourth position) (1.72)	0.15*	
G3 (Third position) (1.79)	G4 (Fourth Position) (1.72)	0.06	

Table- II shows the results of Scheffe's Post-Hoc test to assess pair wise difference of explosive power-horizontal ability among the four groups.

Comparison 1 (Winner and Runner): The comparison of the horizontal explosive power between winner and runner teams were shown insignificant, because the mean difference value 0.14 and confidential interval value 0.14 were similar. Hence both teams had similar nature in explosive power. Comparison 2 (Winner and third position): The comparison of the horizontal explosive power between winner and third position teams were shown significant, because of the mean difference vale 0.22 was higher than the confidential interval value 0.14. Hence the horizontal explosive power was better in winner team than the third position team. Comparison

3(Winner and fourth position): The comparison of the horizontal explosive power between winner and fourth position teams were shown significant, because of the mean difference vale 0.29 was higher than the confidential interval value 0.14.Hence the horizontal explosive power was better in winner team than fourth position team. Comparison 4 (runner and third position): The horizontal explosive power between runner team and third position teams were shown insignificant, because of the mean difference value 0.08 was lesser than the confidential interval value 0.14. Hence the horizontal explosive power was similar in both the team players.

Comparison 5 (runner and fourth position): The comparison of the horizontal explosive power between runner team and fourth position teams were shown significant, because of the mean difference value 0.15 was higher than the confidential interval value 0.14.Therefore horizontal explosive power was better in runner team than fourth position team. Comparison 6 (Third and fourth position): The comparison of the horizontal explosive power between third and fourth position teams were insignificant, because of the mean difference value 0.06 was lesser than the confidential interval value 0.14. Hence horizontal explosive power was similar in both the team players.

Discussion on Findings

The analysis of data using analysis of variance (ANOVA) test showed that variations exist among the selected teams. Bashir Ahmad Mir and Bari (2017) [2] conducted a study on cardiovascular Endurance, Explosive Strength of Legs and Agility among female Inter-University Handball & Hockey players. They found that the Handball players had better Cardiovascular Endurance than the Hockey Players, the Hockey players had better explosive strength of legs than Handball players and Agility was same in both the groups. Ajayaghosh (2017) [1] conducted a study on Comparative study of selected physical fitness variables among men football and hockey players. He found that hockey players shown the better physical fitness. Sunil Sen and K.R. Bhagat (2013) [5] conducted a comparative study of motor fitness of school state level hockey and football players of Himachal Pradesh. Their results showed that hockey players were better in strength component bent knee sit-ups and football players were better in strength component standing broad jump. Hockey and football players had almost same level of agility, speed, endurance and strength component pull-ups. Vishaw Gaurav, Amandeep Singh, Sukhdev Singh (2011) [6] conducted a study on Comparison of Physical Fitness Variables between Individual Games and Team Games Athletes. Their study revealed that those individual games athletes had significantly higher muscular strength, agility, power, speed and cardiovascular endurance than team games athletes. The findings of the present study well accepted in line with the above mentioned earlier studies.

Conclusion

It is concluded that, significant differences were found among the four district hockey players on the capacity of horizontal explosive power. The winner team have better in explosive power- horizontal ability than the other three teams.

The runner team have better in explosive power- horizontal ability than the third and fourth position teams and third position team have better in explosive power- horizontal ability than the fourth position groups.

References

1. Ajay aghosh. Comparative study of selected physical fitness variables among men football and hockey players. International Journal of Physiology, Nutrition and Physical Education. 2017; 2(2):792-794.
2. Bashir Ahmad Mir, Bari. A Comparative Study on Cardiovascular Endurance, Explosive Strength of Legs and Agility among female Interuniversity Handball & Hockey players. International Journal of Multidisciplinary research. 2017, 2(2).
3. Rao PJ. A comparative study on physical fitness among swimmers and Athletics between age group of 12 to 14 years. Asian journal of physical education and computer science in sports. 2010; 2:225-229.
4. Reilly T, Bretherton S. Multivariate Analysis of Fitness of female Field Hockey Players. In Perspectives 148 in Kinanthropometry (Edited by J.A.P. Day) Champaign, IL: Human Kinetics, 1986, 135-142.
5. Sunil Sen, Bhagat KR. Comparative study of motor fitness of school state level hockey and football players of Himachal Pradesh. International Journal of Physical Education, Sports and Yogic Sciences. 2013; 2(3):24-25.
6. Vishaw Gaurav, Amandeep Singh, Sukhdev Singh. Comparison of Physical Fitness Variables between Individual Games and Team Games Athletes. International Journal of Science and Technology, 2011, 4(5).