

RELATIONSHIPS BETWEEN A FEW PHYSICAL CHARACTERISTICS AND HOCKEY PLAYERS

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Abstract

The purpose of the study was to correlate the playing ability in hockey from selected physical fitness variables. To achieve the purpose two hundred and fifteen hockey players were randomly selected from Tamilnadu state, India and their age ranged from 18 to 25 years. The subjects had past played experience of at least two years in hockey and only those who represented their respective teams were taken as subjects. As the performance is concerned, the physical fitness variables play a vital role in overall performance. The criterion measure of overall playing ability was measured by a panel of experts consisting three persons. Pearson product moment correlation analysis was used. The inter - relationship among the selected physical variables and hockey playing ability, were computed by using Pearson' product-moment correlation coefficients.

Key Words: Correlations, Physical Variables, Hockey Players.

1. Introduction

In order to keep the subjects current, research is essential to education. Being an academic subject, physical education also needs to be kept current so that research can identify trends [1]. In today's world, games and sports play a significant and prominent role in people's lives across all domains. Sport is any physical activity done for competition, self-gratification, achieving excellence, developing a skill, or, more frequently, a combination of these reasons [4,5]. As with any other activity, we are well aware of the scientific and technological developments that have occurred in the field of physical education in recent years. Recent studies have shown that a sportsman's overall performance is significantly influenced by their physical, psychological, and anthropometric circumstances in addition to performance [6,7,9]. The theory of personality plays an important role in sports psychology. Given that behaviour is a byproduct of personality, it is highly relevant when analysing an individual's athletic ability. The following characteristics are essential for a good hockey player. He needs to be technically capable of carrying out the different skills needed for hockey [14,15]. These include confidently and precisely scooping, passing, pushing, lifting, and dribbling. No matter what position they play, all good players must be flawless at pushing, hitting, scooping, and dribbling. Hockey players today must understand the value of fitness if they want to play the sport seriously. There has been excessive play in the past with regard to preparation. Enhancing abilities, tactical knowledge, and physical fitness are all part of preparation [2,3,8]. Since a decade, there has been a surge in prediction of playing ability in hockey performances through physical performances which intended the researcher to take up this study.

2. Methodology

The purpose of the study was to correlate the playing ability in hockey from selected physical fitness variables. To achieve the purpose two hundred and fifteen hockey players were randomly selected from Tamilnadu state, India and their age ranged from 18 to 25 years. The subjects had past played experience of at least two years in hockey and only those who represented their respective teams were taken as subjects. As the performance is concerned, the physical fitness variables play a vital role in overall performance. The criterion measure of overall playing ability was measured by a panel of experts consisting three persons. The inter - relationship among the selected physical variables and hockey playing ability, were computed by using Pearson's product-moment correlation coefficients.

3. Results and Discussion

The results are presented in the following tables,

TABLE – I
DESCRIPTIVE STATISTICS OF SELECTED VARIABLES AMONG COLLEGE
LEVEL HOCKEY PLAYERS

S.No	Variables	Range	Minimum	Maximum	Mean	SD ($\pm$)
1	Playing Ability	32.00	58.00	90.00	73.63	5.08
2	Speed	2.19	5.76	7.95	6.10	0.38
3	Explosive Power	0.08	0.36	0.44	1.33	0.13
4	Agility	1.10	10.00	11.10	9.69	0.38
5	Flexibility	17.31	36.40	53.71	42.05	2.37

Table – I showed the descriptive statistics – range, minimum, maximum, mean and standard deviation of physical fitness variables and playing ability of hockey Players. The present study attempted to link the coaches rating as measure of playing ability with the physical fitness variables of hockey players, were presented in table – II.

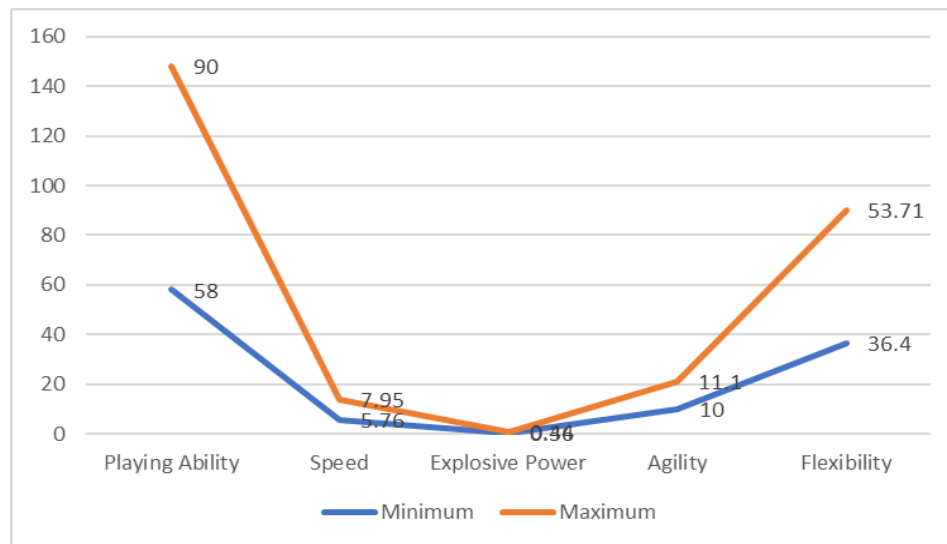
TABLE - II
INTER-CORRELATION OF SELECTED VARIABLES WITH THE PLAYING
ABILITY OF COLLEGE LEVEL HOCKEY PLAYERS

S.No	C.R	X ₁	X ₂	X ₃	X ₄	X ₅
X ₁	0.414**	1				
X ₂	0.034	0.247*	0.039	1		
X ₃	0.411**	0.234*	0.103*	0.150*	1	
X ₄	0.545**	0.342**	0.019	0.510**	0.018	1

C.R	Playing ability
X ₁	Speed
X ₂	Explosive Power
X ₃	Agility
X ₄	Flexibility

It was evident from the Table – II that there was significant relationship between Hockey playing ability (CR) and Speed (X_1), Explosive Power (X_2), Agility (X_3) and Flexibility (X_4), in each variables separately. The result proved that the selected variables speed ($r = 0.414$), agility ($r = 0.411$) and flexibility ($r = 0.545$) were significantly correlated with the hockey playing ability were greater than the required table 'r' value of 0.10 to be significant at 0.05 level. And there was no significant relationship between hockey playing ability and explosive power ($r = 0.034$).

FIGURE I. LINE GRAPH ON PHYSICAL VARIABLES



4. Discussion on Findings

It can be inferred from the findings and related discussion that there is a strong correlation between playing ability and physical fitness. Nonetheless, prior research, literature, and experience have shown that physical fitness and playing ability are significantly correlated, and this study confirmed this finding. Numerous influencing factors that are detailed in the findings discussion could be the cause of this. Ultimately, it was determined that hockey players' physical fitness had a low correlation with explosive power and a significant relationship with their playing abilities [10,11,12,13].

5. Conclusions

1. The results revealed that an Inter – relationship exists significantly between the physical fitness variables among male hockey players.

Bibliography

1. Astorino TA, Tam PA, Rietschel JC, Johnson SM et al. Changes in physical fitness parameters during a competitive field hockey season. The Journal of Strength & Conditioning Research. 2004; 18(4):850-854.
2. Bose Muthu K. An Analytical Study of Physical and Performance Variables of University and state men Hockey players, playing at different playing surfaces.

3. Burr JF, Jamnik RK, Baker J, Macpherson A et al. Relationship of physical fitness test results and hockey playing potential in elite-level ice hockey players. *Journal of Strength & Conditioning Research*. 2008; 22(5):1535-1543.
4. Burr JF, Jamnik VK, Dogra S, Gledhill N. Evaluation of jump protocols to assess leg power and predict hockey playing potential. *Journal of strength and conditioning research*. 2007; 21(4):1139-45.
5. Juliance, R., & Kumaresan, P. (2014). Analysis of volleyball playing ability from selected anthropometric characteristics of college level players. *Academic Sports Scholar*, 3, 8.
6. Kumar, M.S. (2024). Resting Heart Rate Effects of Yogic Practices Involving Resistance and Plyometric Training on Teenage Volleyball Players, *International Journal of Advanced Trends in Engineering and Technology*, 9, 1, 15-19.
7. Mishra MK. A Comparative Study of Speed Ability between High and Low Achievers Male Hockey Players. *Academic Sports Scholar*. 2014; 3(9):01-03.
8. Reilly T, Borrie A. Physiology applied to field hockey. *Sports Med*. 2012; 14(1):10-26.
9. Sambath, K, K., Sha Yin Sha B. S. & Kumar, M. S. (2025). Evaluating the Ability of Volleyball Players to Explosive Power: The Effect of Plyometric Training”, *International Journal of Interdisciplinary Research in Arts and Humanities*, 10, 1, 152-153.
10. Shyamal K, Santosh J, Jaspal Singh S. Study of back strength and its association with selected anthropometric and physical fitness variables in inter-university hockey players. *Anthropologist*. 2012; 14(4):359-368.
11. Sujitha Paulose & Dr.M.Suresh Kumar (2020). Effect of Progressive Muscular Relaxation Training on Selected Psychomotor Variables among Hockey Players. *Alochana Chakra Journal*, 9,5, 2439-2443.
12. Suresh Kumar M.& Needhi raja A. & Ivin Jabakumar, K. (2010). E-content based learning in physical education -with special reference to hockey. Conference proceedings, Bharathidasan University, 15-18.
13. Suresh Kumar, M. (2014). Influence of Circuit Training on Selected Physical Fitness Variables among Men Hockey Players. *International Journal of Recent Research and Applied Studies*, 1, 7(6), 16 - 19.
14. Suresh, Kumar M. (2014). Impact of Conventional Training on Dribbling Ability of Novice Hockey Players. *Star International Research Journal*, 2,1(07).
15. Suresh, Kumar M. (2014). Skill Tests in Field Hockey - Past, Present & Future. *International Journal of Recent Research and Applied Studies*, 1,2(34-36).