



ISSN: 2456-0057  
IJPNPE 2016; 1(2): 40-43  
© 2016 IJPESH  
Impact Factor: RJIF 5.43  
www.journalofsports.com  
Received: 13-05-2016  
Accepted: 14-06-2016

**Dr. Ishwar Singh Malik**  
Assistant Professor  
Department of Physical  
Education, C.D.L.U., Sirsa,  
Haryana, India

**Meenu**  
Research Scholar  
Department of Physical  
Education, C.D.L.U., Sirsa,  
Haryana, India

## Relationship among Physical Fitness Component of Haryana and Delhi Badminton Male Players

**Dr. Ishwar Singh Malik and Meenu**

### Abstract

The purpose of the study was to find out the relationship among physical fitness components between Haryana and Delhi badminton male players. Total one hundred and fifty male badminton players (Haryana 150 and Delhi 150) of 18-25 years age were randomly selected from different badminton academies and different colleges of Haryana and Delhi state. Only selected physical fitness components i.e. the coordination, balance, reaction time and accuracy were measured by using respective techniques and equipments. The between-group differences were assessed by using 't' test and to find out the relationship Karl Pearson coefficient of correlation movement method was applied. The level of  $p \leq 0.05$  was considered significant.

**Keywords:** Physical fitness, Haryana, Delhi, Badminton

### Introduction

Physical fitness is a required element for all the activities in our society. Physical fitness of an individual is mainly dependent on lifestyle related factors such as daily physical activity levels. Physical fitness is also considered as the degree of ability to execute a physical task under various ambient conditions (Basak & Dutta., 2016) <sup>[1]</sup>.

The human body is created to function well when it is in active condition. Physical fitness avoids an individual from being infected or suffers from illness; stay healthy both mentally and physically throughout their lives. In the short term, they are able to perform daily chores easily and able to prevent chronic diseases such as heart attack, high blood pressure, cancer, diabetes, and osteoporosis (Omar-face *et al.*, 2010).

Physical fitness is measured by functional tests that are specific and usually normative-based, rather than criterion-based, thereby leaving unanswered as to how much of a specific fitness factor (e.g. Muscular endurance) is required for a good quality of life (Chia *et al.*, 2007) <sup>[4]</sup>.

### Objective of the study

1. To compare the physical fitness component namely accuracy, reaction time, balance and coordination between Haryana and Delhi badminton male players.
2. To find out the relationship among physical fitness component between Haryana and Delhi badminton male players.

### Hypotheses of the study

1. There will be no significant difference between Haryana and Delhi badminton male players on physical fitness component.
2. There will be no significant coefficient of correlation between Haryana and Delhi badminton male players on physical fitness component.

### Methodology

Total one hundred and fifty male badminton players (Haryana 150 and Delhi 150) of 18-25 years age were randomly selected from different badminton academies and different colleges of Haryana and Delhi state. Only selected physical fitness components i.e. the coordination, balance, reaction time and accuracy were measured by using respective techniques and equipments. The between-group differences were assessed by using 't' test and to find out the relationship Karl Pearson coefficient of correlation movement method was applied.

**Correspondence**  
**Dr. Ishwar Singh Malik**  
Assistant Professor  
Department of Physical  
Education, C.D.L.U., Sirsa,  
Haryana, India

**Results and Interpretation**

**Table 1:** Comparison between Haryana and Delhi male badminton players on accuracy (French Short Service Test)

Group	Mean	S.D	S.E.D	't' Ratio
Haryana Badminton Male Players	52.50	13.13	1.37	0.47
Delhi Badminton Male Players	51.84	11.49		

Significant at 0.05 level  
t 0.05 =1.96

It is evident from table-1 of mean comparison between Haryana and Delhi badminton male players on french short service test. The mean score (52.50±13.13) of the accuracy component of physical fitness of Haryana badminton male players is higher than the mean score (51.84±11.49) of Delhi badminton male players which shows the non-significant difference between the mean score of both the groups. Since t-ratio value 0.47 is much lower than the tabulated t-value, i.e. 1.96 required to be significant.

**Table 2:** Comparison between Haryana and Delhi male badminton players on reaction time (Nelson Hand Reaction Time Test)

Group	Mean	S.D	S.E.D	't' Ratio
Haryana Badminton Male Players	0.492	0.12	0.001	0.04
Delhi Badminton Male Players	0.491	0.11		

Significant at 0.05 level  
t 0.05 =1.96

It is evident from table-2 of mean comparison between Haryana and Delhi badminton male players on Nelson hand reaction time test. The mean score (0.492±0.12) of the reaction time component of physical fitness of Haryana badminton male players is higher than the mean score (0.491±0.11) of Delhi badminton male players which shows the significant difference between the mean score of both the groups. Since t-ratio value 0.04 is much lower than the tabulated t-value, i.e. 1.96 required to be significant.

**Table 3:** Comparison between Haryana and Delhi male badminton players on balance (Strock Stand Balance Test)

Group	Mean	S.D	S.E.D	't' Ratio
Haryana Badminton Male Players	28.60	10.16	1.15	7.46*
Delhi Badminton Male Players	19.95	8.88		

Significant at 0.05 level  
t 0.05 =1.96

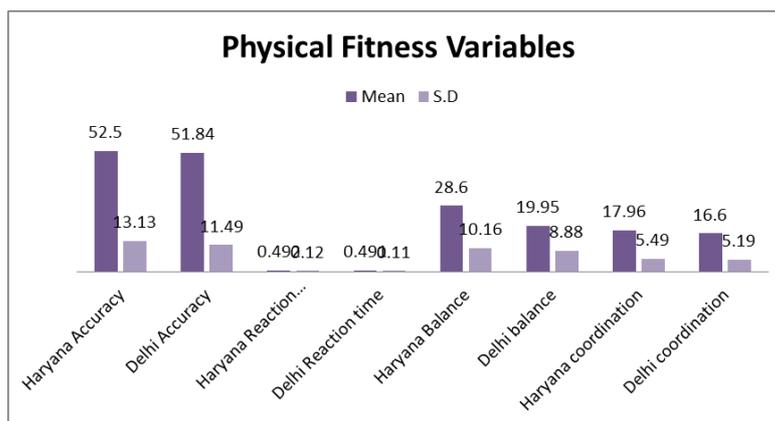
It is evident from table-3 of mean comparison between Haryana and Delhi badminton male players on stork stand balance test. The mean score (28.60±10.16) of the balance component of physical fitness of Haryana badminton male players is higher than the mean score (19.95±8.88) of Delhi badminton male players which shows the significant difference between the mean score of both the groups. Since t-ratio value 7.46 is much higher than the tabulated t-value, i.e. 1.96 required to be significant.

**Table 4:** Comparison between Haryana and Delhi male badminton players on Hand- eye coordination (alternative hand-eye coordination test)

Group	Mean	S.D	S.E.D	't' Ratio
Haryana Badminton Male Players	17.96	5.49	0.61	2.20*
Delhi Badminton Male Players	16.60	5.19		

Significant at 0.05 level  
t 0.05 =1.96

It is evident from table-8 of mean comparison between Haryana and Delhi badminton male players on alternative hand-eye coordinating ability. The mean score (17.96±5.49) of the coordination component of physical fitness of Haryana badminton male players is higher than the mean score (16.60±5.19) of Delhi badminton male players which shows the significant difference between the mean score of both the groups. Since t-ratio value 2.20 is higher than the tabulated t-value, i.e. 1.96 required to be significant.



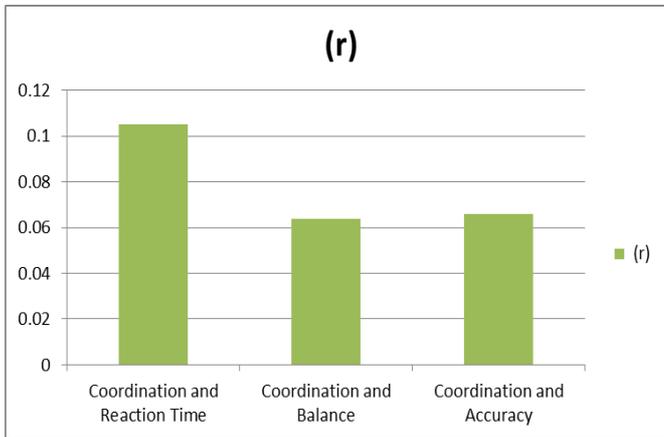
**Fig 1:** Graphical Representation of accuracy, reaction time, balance and Hand-eye coordination between Haryana and Delhi male badminton players

**Table 5:** Relationship between coordination and other component of fitness of Haryana and Delhi badminton male players

Sr. No.	Components Correlated	(r)
1.	Coordination and Reaction Time	.105*
2.	Coordination and Balance	.064
3.	Coordination and Accuracy	.066

\*Significant at 0.05 level

It may be observed from table 5 that coordination was significantly related to physical fitness component of reaction ability (r = .105) of the Haryana and Delhi badminton male players. Whereas other components of physical fitness balance and balance (r = -.064) and accuracy (r = .066) did not show any statistically significant coefficients of correlation with coordination of Haryana and Delhi badminton male players.



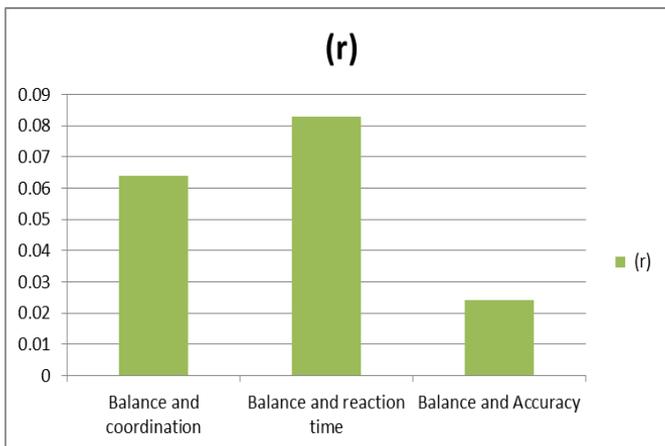
**Fig 2:** Graphical representation of coefficient of correlation between coordination and other component of physical fitness

**Table 6:** Coefficient of correlation between balance and other component of fitness of Haryana and Delhi badminton male players

Sr. No.	Components Correlated	(r)
1.	Balance and coordination	.064
2.	Balance and reaction time	.083
3.	Balance and Accuracy	.024

\*Significant at 0.05 level

It may be observed from table 6 that the balance was did not show any statistically significant coefficient of correlation with coordination ( $r = .064$ ) reaction time ( $r = .083$ ) and accuracy ( $r = .024$ ) of Haryana and Delhi badminton male players.



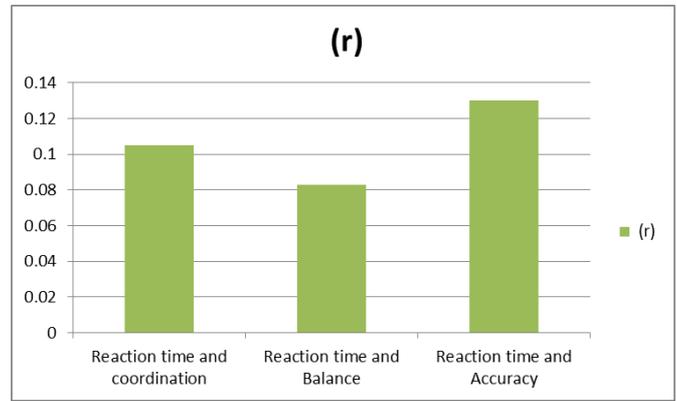
**Fig 3:** Graphical representation of Coefficient of correlation between balance and other component of fitness of Haryana and Delhi badminton male players

**Table 7:** Coefficient of correlation between reaction time and other component of fitness of Haryana and Delhi badminton male players

Sr. No.	Components Correlated	(r)
1.	Reaction time and coordination	.105*
2.	Reaction time and Balance	.083
3.	Reaction time and Accuracy	.130*

\*Significant at 0.05 level

It may be observed from table 20 that reaction time was significantly related to coordination ( $r=.105$ ) and accuracy ( $r=.130$ ) of Haryana and Delhi badminton male players. Whereas other components of physical fitness namely balance ( $r=.083$ ) did not show any statistically significant coefficients of correlation with balance of Haryana and Delhi badminton male players.



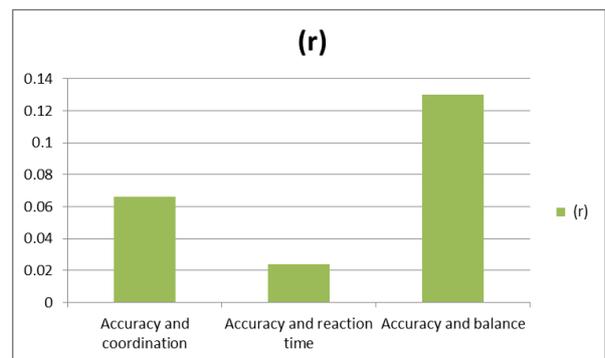
**Fig 4:** Graphical representation of coefficient of correlation between reaction time and other component of fitness of Haryana and Delhi badminton male players

**Table 8:** Coefficient of correlation between Accuracy and other component of fitness of Haryana and Delhi badminton male players

Sr.No.	Components Correlated	(r)
1.	Accuracy and coordination	.066
2.	Accuracy and reaction time	.024
3.	Accuracy and balance	.130

\*Significant at 0.05 level

It may be observed from table 8 that balance was significantly related to balance ( $r=.130$ ) of the Haryana and Delhi badminton male players. Whereas other components of physical fitness coordination ( $r=.066$ ) and reaction time ( $r=.024$ ) did not show any statistically significant coefficients of correlation with balance of Haryana and Delhi badminton male players.



**Fig 5:** Graphical representation of Coefficient of correlation between Accuracy and other component of fitness of Haryana and Delhi badminton male players

### Conclusion

- The magnitude of mean difference being higher in Haryana badminton male players, so it can be concluded that they were better in accuracy than the Delhi badminton male players.
- The magnitude of mean difference being higher in Haryana badminton male players, so it can be concluded that they were better in reaction time than the Delhi badminton male players.
- The magnitude of mean difference being higher in Haryana badminton male players, so it can be concluded that they were better in balance than the Delhi badminton male players.
- The magnitude of mean difference being higher in Haryana badminton male players, so it can be concluded that they were better in coordination than the Delhi badminton male players.

badminton male players.

- Coordination was significantly related to reaction ability and did not show any coefficient of correlation between balance and other component of physical fitness namely balance and of Haryana and Delhi badminton male players.
- Balance was did not show any statistically significant coefficient of correlation with coordination, reaction time and accuracy of Haryana and Delhi badminton male players.
- Reaction time was significantly related to coordination and accuracy of Haryana and Delhi badminton male players. Whereas other components of physical fitness (namely balance) did not show any statistically significant coefficients of correlation with balance of Haryana and Delhi badminton male players.
- Balance was significantly related to balance of the Haryana and Delhi badminton male players. Whereas other components of physical fitness (coordination and reaction time) did not show any statistically significant coefficients of correlation with balance of Haryana and Delhi badminton male players.

evaluation in physical education.” 3rd Ed. New Delhi: Surjit Publications. 1982, 76.

15. Kundra S. Physical Education. New Delhi: Evergreen Publications, Third Edition. 2009.

## References

1. Basak S, Dutta S. A Comparative study of physical fitness parameters between general college student and training college students. *Int J Exp Res. Rev.* 2016; 4:26-30.
2. Bennett JC, Plum F. *Cecil textbook of medicine, 20th ed*, Vol. 1. London, WB Saunders Company, 1996.
3. Carl E. Klafs and Daniel D. Arnheim, *Modern principles of Athletic Training* (Saint Louis : The c.v. Mosby company, 1963), p. 51.
4. Chia M. Fit to play: enabling play and physical activity in children. In: *The power of movement enhancing children’s cognitive, social & emotional and physical development through movement*. Nonis K & Daswani S (eds) Pearson Education Asia, Singapore. 2007, 112-128.
5. Clarke HH, Clarke DH. *Application of measurement to physical education*. Englewood, NJ: Prentice Hall. 1987.
6. Cooper Institute. Parental Overview Document of FITNESSGRAM Assessment in Georgia: FITNESSGRAM Reference Guide Dallas, Texas. 2008.
7. Donald K. Mathews and Edward L. Fox, *The Physiological Basis of Physical Education and Athletics* Philadelphia: WB. Saunders company, 1976, 184.
8. Downey J, Boride D. *Get fit for Badminton*. (London: Pelham Books Ltd.,). 1982; 18:20-160.
9. Fauzee MSO, Ahmad RIRL, Rashid SA, Din A, Hod H. Sport science students' fitness level at University Malaysia Sabah. *European Journal of Social Sciences*. 2010. 12(4):538-544.
10. Guide, Author’s *The world book encyclopedia*. Sydney: World Book, Inc., 1993, 15.
11. Harre. *Physical Fitness and Health Education*, London. 1982.
12. Insel PM, Roth WT, Prince K. *Core Concept in Health* (10th ed). New York: McGraw Hill Ibid. 2006, 365.
13. Institute of Medicine of National Academy of Sciences. *Fitness Measures and Health Outcomes in Youth: Report Brief*, Washington, DC. 2012. [www.iom.edu/fitnessmeasures](http://www.iom.edu/fitnessmeasures).
14. Johnson BL, Nelson JK. *Practical measurement for*