

**Impact  
Factor  
2.147**

**ISSN 2349-638x**

**Reviewed International Journal**



**AAYUSHI  
INTERNATIONAL  
INTERDISCIPLINARY  
RESEARCH JOURNAL  
(AIIRJ)**

**Monthly Publish Journal**

**VOL-III**

**ISSUE-  
III**

**Mar.**

**2016**

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**CHIEF EDITOR – PRAMOD PRAKASHRAO TANDALE**

## **A Comparative Study of Adjustment and Physical Fitness Variables of Hockey, Volleyball and Basketball of Engineering Colleges**

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### **Abstract**

*The purpose of this study was to find out adjustment and physical fitness levels among the intercollegiate Hockey, Volleyball and Basketball men players of engineering college. Random sample of 90 subjects male, 30 each games, was taken. In this study Bell's adjustment inventory and pre tested physical fitness variables were administered to find at the various adjustment and physical fitness levels among the different men sport games.*

*Significant difference at 0.1 was found in 50 meter run and standing broad jump in favor of Hockey and Basketball groups. Sit ups and trunk flexibility in favor of Hockey group. Significant difference at 0.05 levels was also found in favor of Volleyball group.*

*It is concluded that hockey players were more superior in speed, abdominal strength, trunk flexibility and cardio-vascular endurance than the players of the other two groups. Volleyball players were better in leg strength as compared to those of the other two groups. Similarly Basketball players were superior in shoulder strength and agility than the players at the other two groups.*

### **Introduction:**

Today the concept about physical education and sport has altogether changed. Experts and administrators have realised the contribution of it far the development of personality and optimal level of motor performance.

Physical education teacher and sports games coach are continuously striving hard to improve upon the motor performance and mental make up of the sportsmen for the various level of adjustment. Most of the sports organizers through their experiences advocate that games and sports develop desirables syndromes for adjustment (McCloy 1957) (Niwa 1964) showed in this experts results positive correlations exists between physical fitness and adjustment among sportsmen.

Keeping in views these facts at the background the research work tried to find out relationship between the various physical fitness components and level of adjustment among the men players who participated in different sports.

### **Methodology:**

The data were collected in two phases. In the first phase bell adjustment questionnaire was administered among all the sportsmen who participated in different sports.

In the second phase various physical fitness permanent tests were administered according to the already used methods by the various researchers, mentioned in the tool used.

**Sample:**

In the present study 90 sportsmen of engineering college teams like Hockey, Basketball and Volleyball, thirty (30) each sports, were randomly selected from the intercollegiate tournaments of Amravati University.

**Criterion Measurement:**

1. Bell's adjustment (2004) Inventory to measure different level of adjustment.
2. Harvard Step Test : To measure Cardio-vascular endurance
3. Standing broad jump : To measure power
4. Zig-zag run : To measure agility and speed
5. Sit-ups : To measure abdominal strength
6. Trunk flexion : To measure flexibility
7. Shot put : To measure shoulder strength
8. 50 meter dash run: To measure speed.

**Statistics:**

Collecting the data means, standard deviations and t-values were tested of the different level of adjustment of different sports and various physical fitness components.

**Results and Discussion:****Table - I**

**Mean values of Adjustment of Hockey, Volleyball and Basketball  
(Players (N = 30 each group))**



Variables	Hockey	Volleyball	Basketball
Home	12.80	15.13	14.00
Health	10.33	11.93	12.40
Social	10.80	11.60	11.93
Emotional	17.93	20.20	21.86
Educational	15.47	15.40	16.27
Total Adjustment	65.80	73.53	77.20



**Table - II**  
**Comparative t-values of adjustment**  
**(Hockey, Volleyball and Basketball Sportsmen)**

Variables	Hockey Vs Volleyball	Hockey Vs Basketball	Volleyball Vs Basketball
Home	2.617**	1.333	1.749
Health	1.820	2.016*	0.884
Social	0.550	0.779	0.337
Emotional	1.311	2.292	1.075
Educational	0.545	0.636	0.784
Total Adjustment	1.720	2.337*	0.980

Significant level at 0.01 level (2.58) 0.05 level (1.96)

#### **Home Adjustment:**

According to table-I, the mean scores of Hockey, Volleyball and Basketball players were 12.8, 15.3 and 14.00 etc. Three groups were compared among each other. Significant difference was found in Hockey Vs Volleyball players as per table-II. From these result Volleyball men players were found to be better in adjustment as Volleyball men players were found to be better in adjustment as compared to the players of the other two groups followed by Basketball and Hockey.

#### **Health Adjustment:**

According to table-I the mean scores of Hockey, Volleyball, Basketball players were 10.33, 11.93 and 12.40 etc significant difference were found at 0.05 level between Hockey Vs Basketball in better result. Basketball table-II results showed that Basketball players were best regards to health adjustment followed by Volleyball and Hockey players (Table-I). All the group, being sports lovers, seem to have health adjustment.

#### **Social Adjustment:**

The mean score of Hockey, Volleyball and Basketball players were 10.80, 11.60 and 11.93 etc. Table-I means comparison among the three groups showed no significant difference even at 0.05 level. Mean showed that three group the Basketball players were having better social adjustment, followed by Volleyball and Hockey players.

#### **Emotional Adjustment:**

According table-I means score of Hockey, Volleyball and Basketball players were 17.93, 20.20 and 21.86 etc. Means comparison showed significant difference at 0.05 levels between Hockey Vs Basketball (Table-II) Mean showed that three group Basketball players were more emotionally adjusted as compared by Volleyball and Hockey players, some of the evidences results supported same findings.

**Educational adjustment:**

Table-I the mean scores of Hockey, Volleyball and Basketball players were 15.47, 15.40 and 16.27 etc. No comparison showed significant difference even at 0.05 level (Table-II) Mean showed that Basketball. Experts results reported that physically fit people are better in academic achievement. Hence the supported the findings of the present study.

**Total adjustment:**

As per table-I mean scores of Hockey, Volleyball and Basketball players were 65.80, 73.53 and 77.20 etc, comparison among each other group showed significant difference at 0.05 level in favor of Basket (Volleyball Vs Basketball)

Table no. II showed that Basket players were the best in total adjustment, followed by Volleyball and Hockey players. Study conducted by other experts supported the present findings. It can be concluded that adjustment is one of the main requirement of a good players.

**Table - III**

**Comparison of Mean Scores of Physical Fitness Variables of Hockey, Volleyball and Basketball players  
(N = 30)**

Variables	Hockey	Volleyball	Basketball
50 meter run	8.39	10.79	8.64
Standing broad jump	1.72	2.13	1.65
Shot put	5.63	6.05	6.54
Sit ups	41.06	31.63	27.00
Zig-zag run	28.73	31.91	27.35
Trunk flexion	17.6	17.0	12.69
Harvard Step	35.01	34.48	33.18

**Table-IV**

**Comparative t-values of Physical fitness Variables of Hockey, Volleyball and Basketball players  
(N = 30)**

Variables	Hockey Vs Volleyball	Hockey Vs Basketball	Volleyball Vs Basketball
50 meter run	4.10*	1.01	8.92*
Standing broad jump	3.77*	0.17	4.57*
Shot put	2.16*	1.95	0.99
Sit ups	2.86*	4.34*	1.42
Zig-zag run	5.95*	3.68*	10.19*
Trunk flexion	0.36	3.25*	2.61*
Harward step test	0.43	1.30	0.78

Significant at 0.05 level (1.96)



**Physical fitness variables :-** Different physical fitness variables; undertake in the present study, are interpreted and discussed as below:

**50 meter run:** Table no. III showed that the mean scores of Hockey, Volleyball and Basketball players were 8.39, 10.79 and 8.64 etc. Comparison among the groups showed significant difference at 0.05 level in favour of Hockey and Basketball players. Table IV means of the different group showed that Hockey players are more speedy than other two groups.

**Standing broad jump:** Table no II showed that the mean scores of Hockey, Volley ball & Basket ball players were 1.72, 3.13 & 1.65 etc. when the means of different groups were compared Table IV significant differences were found at 0.01 level among Hockey vs Volley ball & Volley ball vs Basket ball. Mean scores of the groups showed that Volley ball players were the best followed by Hockey & Basketball. This result similar to other expert study.

**Shot Put:** Table no II showed that the mean scores of Hockey, Volley ball & Basket ball players were 5.63, 6.05 & 6.54 etc. when the means of different groups were compared Table IV significant differences were found at 0.01 level among Hockey vs Volley ball & Volley ball vs Basket ball. Mean scores of the groups showed that Volley ball players were the best followed by Hockey & Basketball. This result similar to other expert study.

**Sit Ups:** Table no II showed that the mean scores of Hockey, Volley ball & Basket ball players were 41.06, 31.73 & 27.0 etc. comparison among the different groups showed significant differences at 0.01 level among Hockey Vs Volleyball, Hockey Vs Basketball Table IV significant differences were found at 0.01 level among Hockey vs Volley ball & Volley ball vs Basket ball. Mean scores of the groups showed that Hockey players were the best in abdominal strength. This result similar to other expert study.

**Zig-Zag Run:** Table no III showed that the mean scores of Hockey, Volley ball & Basket ball players were 28.73, 31.91 & 27.35 etc. Table IV showed the comparison among the three groups significant differences were found at 0.01 level were found all three comparison. Mean showed that basketball players were the best in agility and speed followed by hockey and volleyball. This result similar to other expert study.

**Trunk Flexion:** Table no III showed that the mean scores of Hockeat all y, Volleyball & Basket ball players were 17.6, 17.0 & 12.69 etc. Table IV showed that the significant differences were found at 0.01 level between Hockey vs basket ball players & at 0.05 level between Volley ball vs Basket ball players were the best in trunk flexibility. This result similar to other expert study.

**Harward Step Test:** Table no III showed that the mean scores of Hockey, Volley ball & Basket ball players were 35.01, 34.48 & 33.18 etc. Table IV showed that no significant difference even at 0.05 level among the three comparisons. As the result showed no significant differences, it seemed that all the groups are almost equal in cardiovascular endurance. It can be said that cardiovascular endurance improves with physical fitness.

**Conclusion:**

In the present study it is concluded that in adjustment, Volleyball players were having better adjustment in Home and Basketball players were having better adjustment in Health, Social, Emotional and Total adjustment than Hockey and Volleyball players. From there result it can be inferred that Basketball players are having better adjustment capacity than Volleyball and Hockey players.

With regard to physical fitness variables Hockey players were better in speed. Abdominal strength, trunk flexibility and cardiovascular endurance. Volley ball players were superior in leg strength whereas Basket ball players were superior in shoulder strength and agility than the other two groups of players. From these results it is concluded that physical fitness variables are prerequisites for physical fitness and best performance for different sports.

**References**

- AAHPER (1976) Youth fitness test manual, Revised ed., American Alliance for Health Physical Education and Recreation, Washington, D.C.
- Barrow H.M. (1954) Test of motor ability for college men. Research Quarterly, 25 (3) : 253
- Bell H.M. (1961) Manual for the adjustment inventory, California (USA) Consulting Psychologist Press Inc.
- Biddulph L.G. (1966) Athletic achievement and personal , social adjustment of high school boys, Research Quarterly, 37 (2) : 1-7
- Brough Lucien (1943) The Step Test : A simple method of measuring physical fitness for muscular work in young men. Research Quarterly 14:31-36
- Buck H. C (1986) Rules of game and sports YMCA Pub, House Bharat Yuvak Bhawan , Jai Singh road , New Delhi
- Manjulka Rani (1978) A comparative study of basic physical fitness of gymnastic and non gymnastic girls players of Maharashtra , age 14+ to 20+ years, Unpublished M.phil Dissertation Amravati University, Amravati.
- Singh K. (1978) Physical Fitness of Hockey Players , NIS Journal , 1(3) 29.
- Usha Rani (2007) A study of personality adjustment of athletes and non athletes (M.A) Un published Thesis Pune University.
- Yarnell C.D. (2005) Relationship of physical fitness to selected measures of popularity, Research Quarterly. 3:287.