Construction of Norms for Selected Physical Variables for Engineering College Men Hockey Players in Tamilnadu

S.Balaganesh[1] & Dr.J.P.Sugumar[2]

[1]Ph.D., Research Scholar (Part-Time), Department of Physical Education, Tamilnadu Physical Education and Sports University, Chennai, Tamilnadu, India.
[2]Director of Physical Education, Anna University, Chennai, Tamilnadu, India.

Abstract

The study was designed to construct norms for engineering college men hockey players. Hence players from all over the engineering colleges in Tamilnadu who fulfill these conditions were selected for the study. The data were collected from 714 engineering college men hockey players. The researcher in this study attempted to construct norms for the selected physical variables for engineering colleges between the age group of 18 and 25 using single group normative design. The data for the selected variables to construct norms were collected by administering the appropriate standard tests. Before administering the test, the purpose and procedure were explained to the subjects in detail. The data was assessed during competition period. After collecting the raw scores mean and standard deviation were computed. After calculating the mean and the standard deviation(s) the scores were converted into percentile scale and 6- sigma scale for developing final grade. In explosive power out of the seven hundred and fourteen players, 25 players were in excellent grade, 172 players were in very good grade, 329 players were in good grade, 163 players were in average grade and 25 players were in below average grade. In speed out of the seven hundred and fourteen players, 31 players were in excellent grade, 165 players were in very good grade, 313 players were in good grade, 181 players were in average grade and 24 players were in below average grade.

Keywords: Norms, Physical, Engineering, Hockey Players.

Introduction

The game of hockey is very complicated in terms of skills and team work. In this game, everyone should mastery over fundamental skills like Dribbling, Hitting, Pushing, Stopping etc. When one has mastered the fundamental skills of the games, he gets a feeling of well being. High level of performance otherwise known as playing ability in hockey depends upon proficiency over the fundamental skills. High level of performance of a hockey player depends upon fundamental skills. It is recognised that among the fundamentals, ability to dribble the ball, ability to hit, ability to push, ability to trap the ball, are of primary importance for high level of performance. Hence, from the fundamental skill a few selected skills namely Dribbling, Hitting, Trapping, Scooping will be selected as the variables for the study for this construction of norms (Dureha & Akhil, 2003).

Norm is a scale that permits conversion from a raw score to a score capable of comparison and interpretation. If a test is accompanied by norms, its usefulness is enhanced it's characteristic of average and

Correspondence
Dr.J.P.Sugumar
Anna University

range are known. The norms we prepare should not be accepted at face value. A raw score becomes capable of comparison and interpretations when there is a norm. Norms are representative of some larger populations. Sufficient cases alone do not make good norms but coupled with proper sampling this provides a symmetric distribution. If the performance of a group is not similar in range and average to the normative group, then the norms are not appropriate and should not be used for interpretive purpose (Abdul & Kishore, 2014).

Materials and Methods

The study was designed to construct norms for engineering college men hockey players. Hence players from all over the engineering colleges in Tamilnadu who fulfill these conditions were selected for the study. The data were collected from 714 engineering college men hockey players. The researcher in this study attempted to construct norms for the selected physical variables for engineering colleges between the age group of 18 and 25 using single group normative design. The data for the selected variables to construct norms were collected by administering the appropriate standard tests. Before administering the test, the purpose and procedure were explained to the subjects in detail. The data was assessed during competition period. After collecting the raw

scores mean and standard deviation were computed. After calculating the mean and the standard deviation(s) the scores were converted into percentile scale and 6-sigma scale for developing final grade.

Results and Discussions on Findings

Table 1. *Descriptive analysis of raw scores on explosive power*

S.No	Name of the Variable	Mean	Median	SD (±)
7.	Explosive Power	1.58	1.58	0.07

The above table shows that the descriptive statistics of raw scores on explosive power.

Table 2. *Percentile norms for explosive power*

Percentiles	Performance Scores
10	1.49
20	1.52
30	1.54
40	1.56
50	1.58
60	1.60
70	1.62
80	1.64
90	1.67
100	1.80

The above table shows the Percentile Scale for explosive power for hockey players that was prepared by keeping the best scores on 100th percentile and the poorest scores on 10th percentile. In 100th percentile the highest value recorded was 1.80 mts. and lowest value recorded was 1.49 mts. in 10th percentile.

Table 3. *6 – sigma scale for explosive power*

6-Sigma Scale	Performance Scores
-3 σ	1.45
-2 σ	1.49
-1 σ	1.53
σ	1.58
1 σ	1.62
2 σ	1.66
3 σ	1.70

Finally from the norms a Grading Scale was developed to interpret the performance of the players which was presented in table 4.
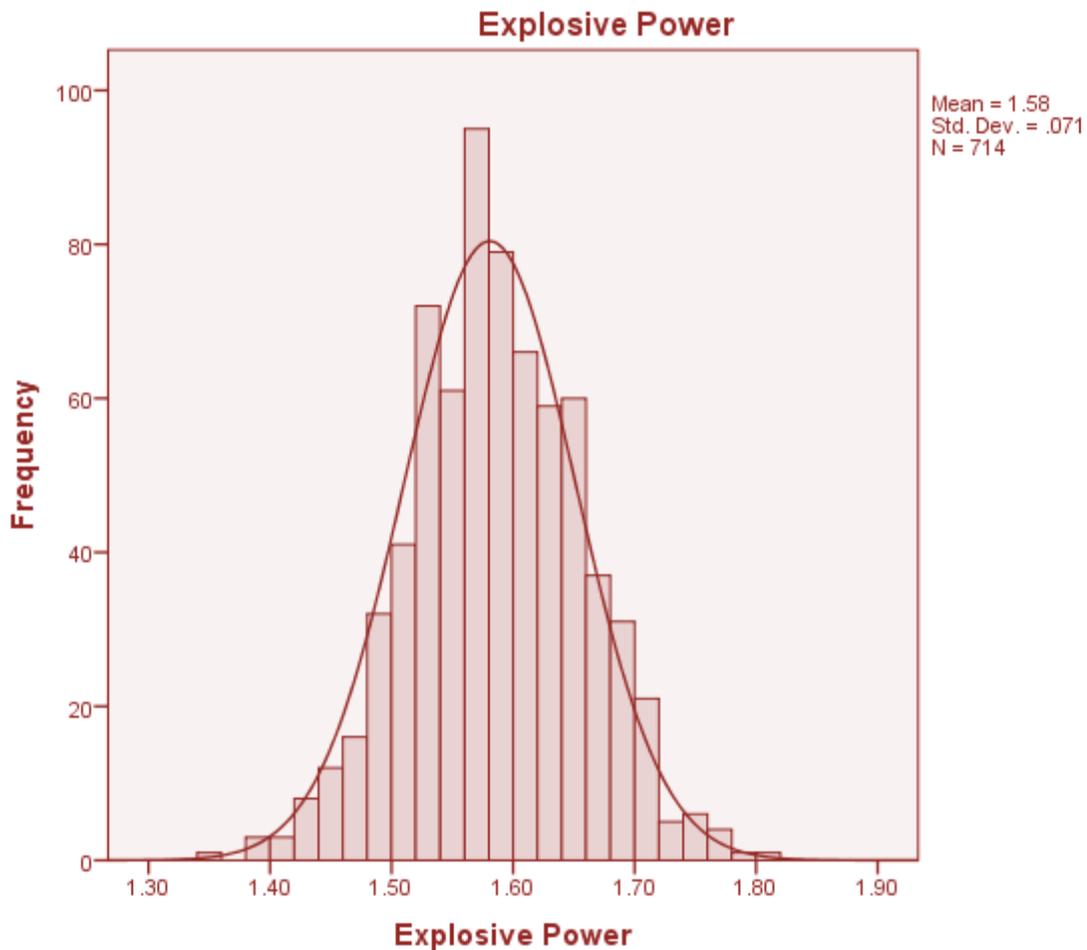
Explosive Power

In this study, the explosive power of players was shown to be consistent with a good standard. For the variable, the mean score was 1.58 and Standard Deviation was 0.07.

Table 4. *Grading scale for the interpretation of explosive power scores*

Performance Scores	Alphabetical Grade	Interpretive Grade	No of Players in each Grade
Above 1.70	A	Excellent	25
1.63 to 1.70	B	Very Good	172
1.54 to 1.62	C	Good	329
1.45 to 1.53	D	Average	163
Below 1.45	E	Below Average	25

Out of the seven hundred and fourteen players, 25 players were in excellent grade, 172 players were in very good grade, 329 players were in good grade, 163 players were in average grade and 25 players were in below average grade.

Figure I. Histogram showing the normal distribution of explosive power

Figure I. Histogram showing the normal distribution of explosive power

Speed

In this study, the speed of players was shown to be consistent with a good standard. For the variable, the mean score was 7.04 and Standard Deviation was 0.09.

Table 5. *Descriptive analysis of raw scores on speed*

S.No	Name of the Variable	Mean	Median	SD (±)
8.	Speed	7.04	7.04	0.09

The above table shows that the descriptive statistics of raw scores on speed.

Table 6. *Percentile norms for speed*

Percentiles	Performance Scores
10	7.38
20	7.16
30	7.12
40	7.09
50	7.07
60	7.04
70	7.02
80	6.99
90	6.96
100	6.92

The above table shows the Percentile Scale for speed for hockey players that was prepared by keeping the best scores on 100th percentile and the poorest scores on 10th percentile. In 100th percentile the highest value recorded was 6.92 sec. and lowest value recorded was 7.38 sec. in 10th percentile.

Table 7. *6 – sigma scale for speed*

6-Sigma Scale	Performance Scores
-3 σ	6.87
-2 σ	6.93
-1 σ	6.98
σ	7.04
1 σ	7.09
2 σ	7.14
3 σ	7.20

Finally from the norms a Grading Scale was developed to interpret the performance of the players which was presented in table 8.

Table 8. *Grading scale for the interpretation of speed scores*

Performance Scores	Alphabetical Grade	Interpretive Grade	No of Players in each Grade
Above 7.20	E	Below Average	31
7.10 to 7.20	D	Average	165
6.99 to 7.09	C	Good	313
6.87 to 6.98	B	Very Good	181
Below 6.87	A	Excellent	24

Out of the seven hundred and fourteen players, 31 players were in excellent grade, 165 players were in very good grade, 313 players were in good grade, 181 players were in average grade and 24 players were in below average grade.

Figure II. Histogram showing the normal distribution of speed
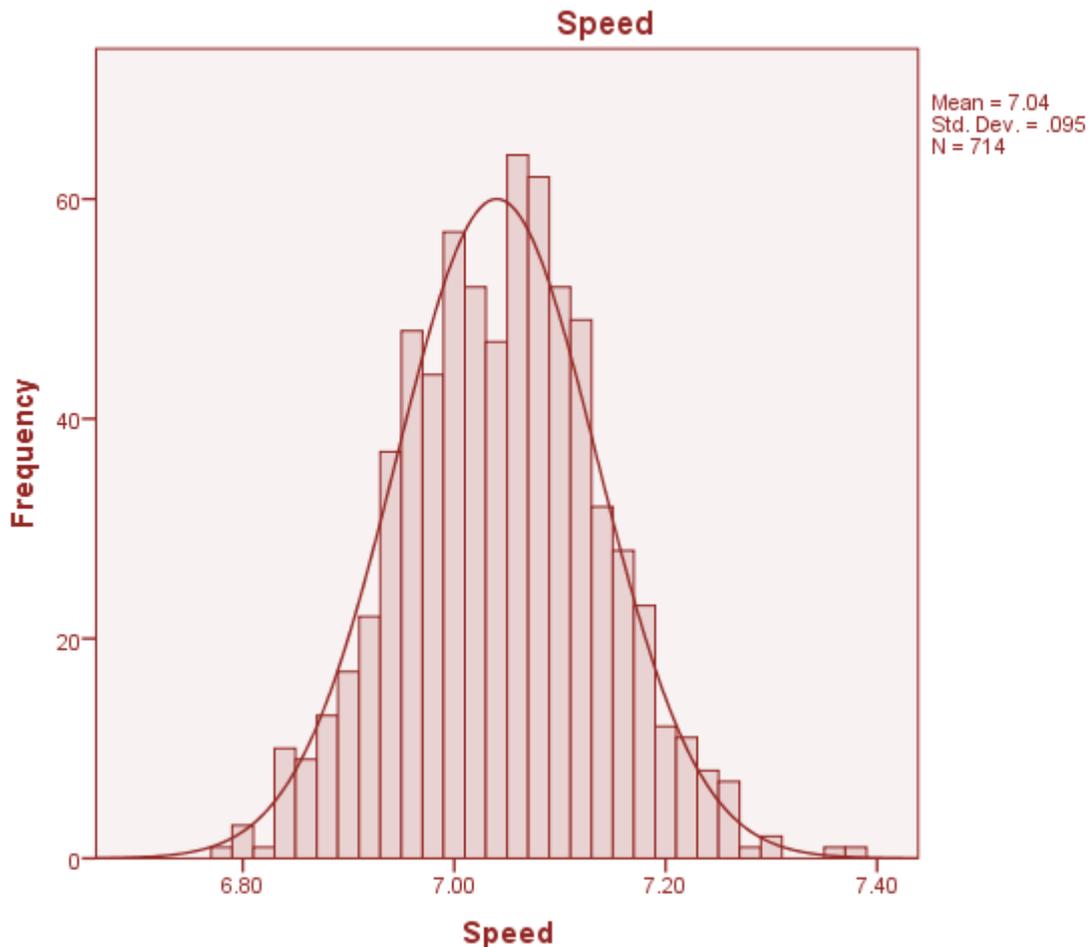
Conclusions

1. In explosive power out of the seven hundred and fourteen players, 25 players were in excellent grade, 172 players were in very good grade, 329 players were in good grade, 163 players were in average grade and 25 players were in below average grade.

2. In speed out of the seven hundred and fourteen players, 31 players were in excellent grade, 165 players were in very good grade, 313 players were in good grade, 181 players were in

average grade and 24 players were in below average grade.

Reference

1. Abdul Mohaimin & Y. Kishore (2014). Construction of passing ability test for basketball. *International Journal of Multidisciplinary Research and Development,* 1(7): 94-96.
2. Anne, L. Rothstein. (1985). R*esearch Design and Statistics for Physical Education.* Englewood Cliffs, N.J: Prentice Hall, Inc.
3. Author's Guide. (2013). *Rules of Hockey*. Switzerland: The International Hockey Federation.
4. Baechle, T. R. (1994). *Essential of Strength Training and Conditioning.* Champaign Illinois: Human Kinetics Publishers.
5. Baljinder Singh Bal, Gagandeep Singh, Kamal Kishore, Surinder Singh (2019). Construction of physical fitness test items norms of taekwondo player of guru nanak dev university, amritsar, India. *European Journal of Physical Education and Sport Science*, 5,1.
6. Baumgartner, T, A., Andrew, S. J., Matthew, T. M. & David, A. R. (2003). *Measurement for Evaluation in Physical Education & Exercise Science.* New York: Mc-Graw Hill.
7. Connolly, Helen & Egan, Tracie. (2005). *Field Hockey: Rules, Tips, Strategy and Safety* (1st ed). New York, NY: The Rosen Publishing Group, Inc.
8. Damras, D., Kanjana, D. & Supachi, S. (1990). A construction of a Hockey Skill Test for College Students. Unpublished Masters Thesis. Khonkaen University.
9. Dorthy, Y. & Landie, S. (1992). *Field Hockey-Fundamental and Techniques.* London: Faber and Faber limited.
10. Dureha, D. K. (1985). Construction of an objective skill test in Hockey. Unpublished Master Thesis., Jiwaji university, Gwalior.
11. Dureha, K.Dilip. & Akhil, Mehrotra (2003). *Teaching & Coaching Hockey.* New Delhi: Paperbacks.
12. Elferink, M.T., Kannekens, R., Lyons, J., Tromp, Y. & Visscher, C. (2010). Knowing what to do and doing it: differences in self-assessed tactical skills of regional, sub-elite, and elite youth Field Hockey players. *J Sports Sci*, 28(5):521-8.
13. Fleming P. R., Young, C., Roberts, J. R., Jones, R. & Dixon, N. (2005). Human perceptions of artificial surfaces for Field Hockey. *Sports Engineering,* 8, 3, 121-136.
14. Mitchell – Taverner, Claire. (2005). *Field hockey: techniques & Tactics*. First Edition, Human Kinetics.