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Predicting the physical performances for BBK D.A.V. collegiate girls by framing its norms

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Abstract

One Hundred (N=100), subjects from BBK D.A.V. College of Girls affiliated to Guru Nanak Dev University, Amritsar were selected for the present study. Any acute or chronic physical disease that would limit the ability of the players to participate in the study. The objectives of the study entail to find out the Descriptive Statistics (Mean & Standard Deviation) and (Hi & Low) and to determine the Distribution of Grades under Normal Distribution, further it was graded into five grades i.e., very good, good, average, poor and very poor. In 100 M: - The score below 12.045 was considered excellent, between 14.113 and 13.079 was considered very good, 14.113 and 16.181 was considered good, 16.181 and 17.212 was considered fair although, the scores above 18.249 was considered poor. In 200 M: - The score below 22.649 was considered excellent, between 25.114 and 23.88 was considered very good, 27.582 and 25.114 was considered good, 27.582 and 28.816 was considered fair although, the scores above 28.816 was considered poor. In Long jump: - The score above 3.802 was considered excellent, between 3.13 and 2.459 was considered very good, 2.459 and 1.117 was considered good, 1.117 and 0.446 was considered fair although, the scores below 0.226 was considered poor. In Shot-Put: - The score above 5.427 was considered excellent, between 5.427 and 4.536 was considered very good, 3.645 and 1.863 was considered good, 1.863 and 0.972 was considered fair although, the scores below 0.081 was considered poor. In Javelin: - The score above 19.952 was considered excellent, between 16.266 and 12.58 was considered very good, 12.58 and 5.208 was considered good, 5.208 and 1.522 was considered fair although, the scores below 1.522 was considered poor.

Keywords: physical performance, BBK D.A.V. collegiate girls, norms

Introduction

Fitness is an individual state's ability to cope with a complete and total balance lifestyle involving the social, psychological and physiological aspects. On the hand, physical fitness is a person ability to perform daily task with efficiently and actively without feeling tired or lethargic and have enough energy to engage in recreation activities. An individual who is physically fit must be able to face with an emergency situation that may arise ^[1]. Ahmad Hashim (2004) ^[2], describes physical fitness is related with a person's ability to perform his daily chores with enthusiasm and ability to avoid and stay away from getting chronic diseases through sedentary life style. Physical fitness is also influenced by aspects of heredity, environment, life style and behavior ^[3, 4,5]. Health related fitness comprises five components which are cardiovascular endurance, muscle endurance, muscle strength, flexibility and body composition. Fitness motor based comprises six components which are coordination, balance, agility, power, reaction time and speed ^[6, 7, 8, 9, 10].

Based upon the evaluation of a set of measurements, one has to take decisions or make selections. The reader should be able to say that test, measurement, evaluation and talent selection constitute a continuous process, test leads to measurement to evaluation to talent selection in that order. Each component of the process is indispensable and needs a technical expert.

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Table 1: Some Corresponding Examples

Sr. No.	Some Corresponding Examples			
	Test	Measurement	Evaluation	Selection
(i)	Question paper of written examination.	Answer books written by students are given scores by the examiner.	Fail/pass in individual papers.	Decision of fail pass based on combined criteria for all tests.
(ii)	Questionnaire of surveys.	Scoring by the researcher.	Assigning individual values bad, good excellent to each answer.	Assigning status or result based on all replies.
(iii)	Weighing machine or thermometer etc.	Weight in kg or lbs or temperature in degrees etc.	Assigning status (above or below average etc. to each measurement).	Selection of subjects for intervention needed or not.
(iv)	Determines, "How well"?	Determines, "How much?" (Singh, 2008).	Determines, "How good?"	Selects or rejects.

Norm is a standard to which an obtained score is compared. It is a kind of an average that provided basis for judgments. Norms contributed the essential aspects of a scientific test, since every test is governed and regulated by norms. Norm is basically a way of doing things. So, norms are the essence of a test organization. But norms of one test may differ from norms of another.

The norms should be prepared in the light of the following questions

- What basis tuned for norm construction - chronological age, grade level, skill achievement?
- In the sample sufficient, random and representative?
- Are the norms based on local or national statistics?
- Are the norms tentative, arbitrary or experimental?
- Are all important extraneous factors eliminated?
- Are the statistics sufficiently refined?
- Is the appropriate statistical tool used?

Selection of Subjects

100, subjects from BBK DAV College of Girls affiliated to Guru Nanak Dev University, Amritsar were selected for the present study. Any acute or chronic physical disease that would limit the ability of the players to participate in the study.

Selection of Events

The study will further be delimited to the following events of athletics (*viz.* Running, Jumping and Throwing). The description of events is brought forth at Table 2:

Table 2: Events (Running: 100 M, 200 M; Jumping: Long Jump; Throwing: Shot-Put and Javelin Throw).

Events				
Running		Jumping	Throwing	
100 M	200 M	Long Jump	Shot-Put	Javelin Throw

Table 3: Overview of related literature

Sr. No.	Year	Author/s	Inferences
1.	2014	Shiva Kumar S. <i>et al.</i>	Conducted a study on Construction of Physical Fitness Norms for Adolescent Boys of Karnataka state. The purpose of the study was to examine the influence of regional diversity on physical fitness parameters and health awareness of students studying in the high school and health awareness of students studying in the high schools of Karnataka State.
2.	2013	Gurpreet Singh	Conducted a study on construction of athletics performance norms for physical education students. The purpose of the study was to construct norms for evaluating the performance of physical education students in athletics events.
3.	2010	Albatikhi	Conducted a study on Constructing Norms for Selected Physical Fitness Items as an Indicator for Sport Selection among Sports Superior Student at the University of Jordan. The purpose of this study was to construct norms for physical fitness items (cardio vascular endurance, agility, and explosive power) at the university of Jordan sports superior students for sports proficiency list.
4.	2001	Bhatia	Constructed norms on selected motor fitness components for ages between 13 to 17 years, studying in schools of Greater Gwalior. School children ages of 13 to 17 years were selected as subjects.
5.	1998	Ramputty	Constructed norms in selected fitness test items for girls of age group 12-16 years in Gwalior District. She administered the test on 650 students of Kendriya Vidyalaya and public schools of Gwalior District.

Aim and objectives

This study aims to Predict the Physical Performances for Collegiate Girls by framing its Norms and Distribution of Grades under Normal Distribution. These above aims erect the respective study objectives: -

- To find out the Descriptive Statistics (Mean & Standard Deviation) and (Hi & Low).

- To determine the Distribution of Grades under Normal Distribution, further it will be graded in into five grades i.e., very good, good, average, poor and very poor.

Inclusion and exclusion criteria

There were some inclusion and exclusion criteria used for participating in the study. Those included the following: -

Table 4: Inclusion and Exclusion criteria used for participating in the study

Inclusion Criteria	Exclusion Criteria
100, subjects from BBK DAV College of Girls affiliated to Guru Nanak Dev University, Amritsar	Age > 17 and < 23
Only female subjects were included for the present study.	Any acute or chronic physical disease that would limit the ability of the players to participate in the study.
	Denial to give informed consent.

Statistical treatment

The following statistical analysis will be employed to fulfill the objectives

1. First objective will be fulfilled by applying the Descriptive Statistics (Mean & Standard Deviation) and

Percentile Plot (Hi & Low).

2. Second objective will be solved by applying the Distribution of Grades under Normal Distribution, further it will be graded in into five grades i.e., very good, good, average, poor and very poor.

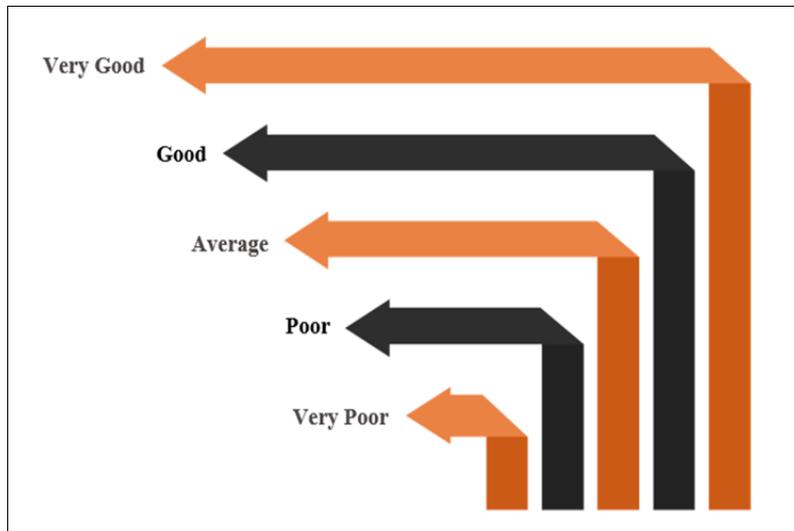


Fig 1: Grades concerning i.e., very good, good, average, poor and very poor

Results

Table 5: Descriptive analysis (Mean ± SD) and (Maximum & Minimum) concerning (Running: 100 M, 200 M; Jumping: Long Jump; Throwing: Shot-Put and Javelin Throw) (N₁=200).

Sr. No.	Test Items	Descriptive analysis		Percentile contrive	
		(X) and (SD)		Max.	Min.
1.	100 M	15.147	1.034	17	13.29
2.	200 M	26.348	1.234	24.2	29
3.	Long Jump	1.788	0.6712	4.55	0.97
4.	Shot-Put	2.754	0.891	4.55	0.99
5.	Javelin	8.894	3.686	15.6	4.55

The above table indicates that

- **100 M:** The Descriptive analysis (Mean ± SD) and (Maximum & Minimum) scores were 15.147 & 1.034 and 17 & 13.29 respectively for BBK DAV Collegiate girls.
- **200 M:** The Descriptive analysis (Mean ± SD) and (Maximum & Minimum) scores were 26.348 & 1.234 and 24.2 & 29 respectively for BBK DAV Collegiate girls.
- **Long jump:** The Descriptive analysis (Mean ± SD) and

(Maximum & Minimum) scores were 1.788 & 0.6712 and 4.55 & 0.97 respectively for BBK DAV Collegiate girls.

- **Shot-Put:** The Descriptive analysis (Mean ± SD) and (Maximum & Minimum) scores were 2.754 & 0.891 and 4.55 & 0.99 respectively for BBK DAV Collegiate girls.
- **Javelin:** The Descriptive analysis (Mean ± SD) and (Maximum & Minimum) scores were 8.894 & 3.686 and 15.6 & 4.55 respectively for BBK DAV Collegiate girls.

Table 6: Distribution for a Data Set concerning (Running: 100 M, 200 M; Jumping: Long Jump; Throwing: Shot-Put and Javelin Throw) (N₁=200).

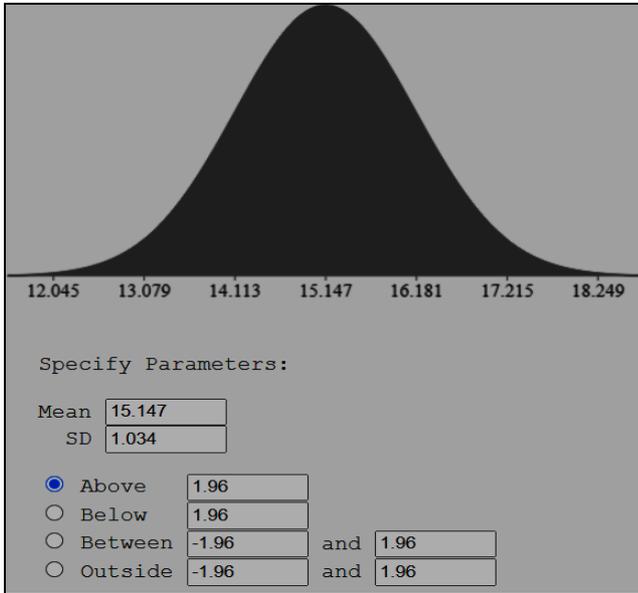
Sr. No.	Test Items	Excellent	Very Good	Good	Fair	Poor
1.	100 M	12.045- Below	14.113-13.079	14.113-16.181	16.181-17.212	18.249- Above
2.	200 M	22.649- Below	25.114- 23.88	27.582-25.114	27.582-28.816	28.816- Above
3.	Long Jump	3.802- Above	3.13- 2.459	2.459- 1.117	1.117- 0.446	0.226- Below
4.	Shot-Put	5.427- Above	5.427- 4.536	3.645- 1.863	1.863- 0.972	0.081- Below
5.	Javelin	19.952- Above	16.266- 12.58	12.58- 5.208	5.208- 1.522	1.522- Below

The above table indicates that

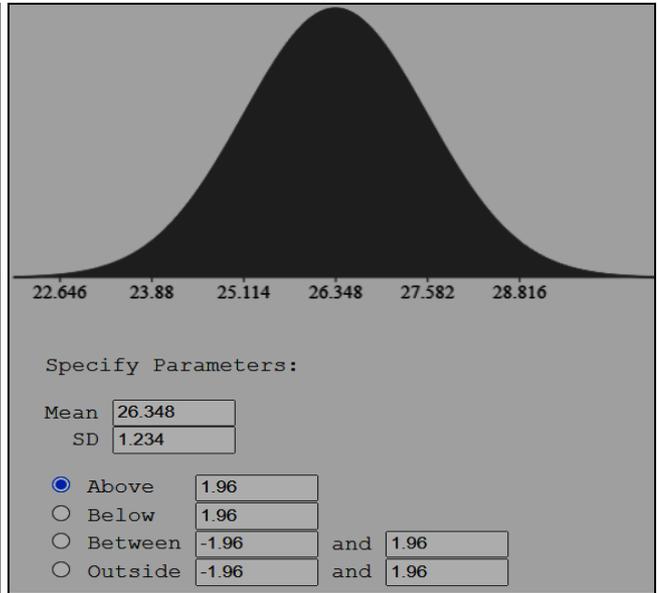
- **100 M:** The score below 12.045 was considered excellent, between 14.113 and 13.079 was considered very good, 14.113 and 16.181 was considered good, 16.181 and 17.212 was considered fair although, the scores above 18.249 was considered poor.
- **200 M:** The score below 22.649 was considered excellent, between 25.114 and 23.88 was considered very good, 27.582 and 25.114 was considered good, 27.582 and 28.816 was considered fair although, the scores above 28.816 was considered poor.
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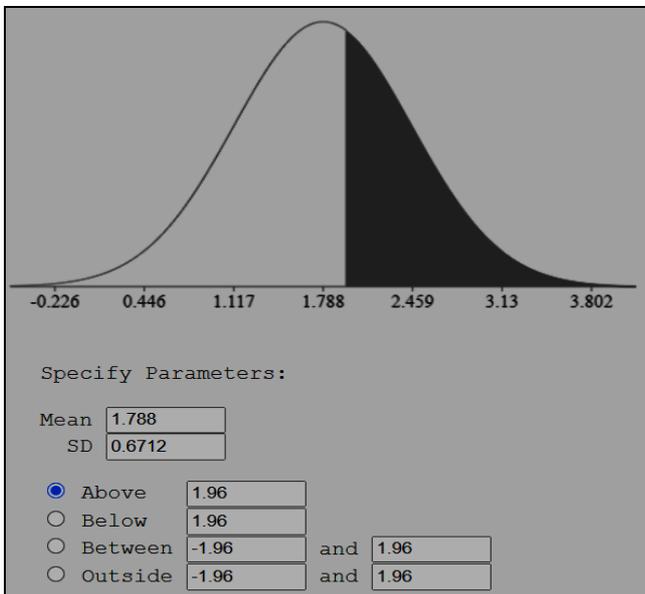
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- **Javelin:** The score above 19.952 was considered excellent, between 16.266 and 12.58 was considered very good, 12.58 and 5.208 was considered good, 5.208 and 1.522 was considered fair although, the scores below 1.522 was considered poor.



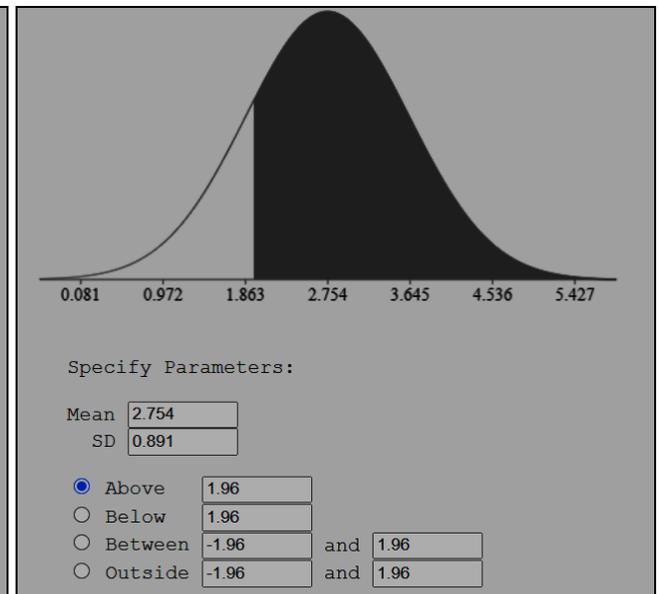
(a)



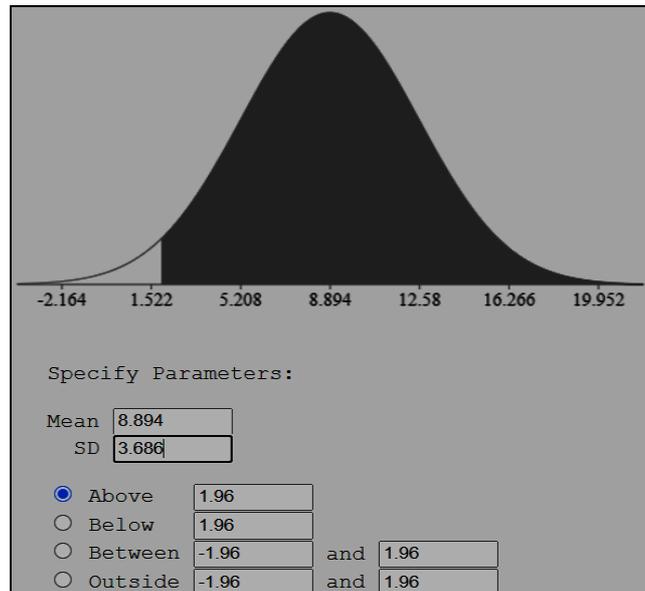
(b)



(c)



(d)



(e)

Fig 2: Area Under the Normal Distribution of (a) 100 M (b) 200 M (c) Long Jump (d) Shot-Put and (e) Javelin
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