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Physical fitness for collegiate girls by framing its norms and distribution of grades under normal distribution

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Abstract

1050, subjects for Physical Fitness for Collegiate Girls of Amritsar District were selected for the present study. The study was further delimited to the following events of athletics (*viz.*, 100 M Run and 200 M Run). To find out the Descriptive Statistics (Mean & Standard Deviation). To determine the Distribution of Grades under Normal Distribution, further it was graded in into five grades *i.e.*, very good, good, average, poor and very poor. 100 M Run: - The score Below 12.206 was considered Very Good, between 12.206-14.459 was considered Good, between 14.459-18.965 was considered Average, between 18.965-21.218 was considered Poor although, the scores Above Very Poor was considered poor. 200 M Run: - The score below 23.963 was considered Very Good, between 23.963 -25.184 was considered Good, between 25.184 -27.626 was considered Average, between 27.626 -28.8 47was considered Poor although, the scores above 28.847 was considered Very Poor.

Keywords: Physical fitness, norms, grades, 100 M Run, 200 M Run

Introduction

Over the course of the last century, a multidisciplinary field of knowledge has developed that has identified several cognitive and intellectual benefits of regular physical activity (PA) [1, 2, 3, 4, 5, 6, 7]. Physical fitness includes physical fitness and health-based motor acting based on physical fitness. Cardiovascular endurance, muscular endurance, muscular strength, flexibility and body composition are components of health-related physical fitness.

Selection of Subjects

1050, subjects for Physical Fitness for Collegiate Girls of Amritsar District were selected for the present study. The study was further delimited to the following events of athletics (*viz.*, 100 M Run and 200 M Run). The description of events is brought forth at Table 1:

Table 1: Events (Running: 100 M Run and 200 M Run)

Events	
Running	
100 M Run	200 M Run

Objectives

1. To find out the Descriptive Statistics (Mean & Standard Deviation).
2. To determine the Distribution of Grades under Normal Distribution, further it was graded in into five grades *i.e.*, very good, good, average, poor and very poor.

Statistical treatment

1. The first objective was fulfilled by applying the Descriptive Statistics (Mean & Standard Deviation).
2. The second objective was solved by applying the Distribution of Grades under Normal Distribution, further it will be graded into five grades *i.e.*, very good, good, average, poor and very poor.

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Results

Descriptive Statistics

Table 2: Descriptive statistics concerning (Running: 100 M run and 200 M Run)

Events	100 M	200 M
Minimum	13	24.2
Maximum	24.77	29.9
Range	11.77	5.7
Size	1050	1050
Sum	17547.08	27725.7
Mean	16.7115048	26.4054286
Median	16.215	26.4
Mode	14.9	26.3
Standard Deviation	2.2536598	1.22167393
Variance	5.07898248	1.49248719

Table 3: Descriptive analysis (Mean \pm SD) concerning (Running: 100 M Run, 200 M Run).

Sr. No.	Test items	Descriptive Analysis (X) and (SD)	
1.	100 M Run	16.7115	2.253
2.	200 M Run	26.405	1.221

The above table indicates that

- 100 M Run:** The Descriptive analysis (Mean \pm SD) were 16.7115 & 2.253.
- 200 M Run:** The Descriptive analysis (Mean \pm SD) were 26.405 & 1.221.

Table 4: Distribution for a data set concerning (Running: 100 M Run, 200 M Run; jumping: long jump; throwing: shot-put and javelin throw) (N=200).

Sr. No.	Test Items	Very Good	Good	Average	Poor	Very Poor
1.	100 M Run	Below 12.206	Between 12.206 – 14.459	Between 14.459 – 18.965	Between 18.965 – 21.218	Above 21.218
2.	200 M Run	Below 23.963	Between 23.963 -25.184	Between 25.184 -27.626	Between 27.626 -28.847	Above 28.847

The above table indicates that

- 100 M Run:** The score Below 12.206 was considered Very Good, between 12.206 – 14.459 was considered Good, between 14.459 – 18.965 was considered Average, between 18.965 – 21.218 was considered Poor although, the scores Above Very Poor was considered poor.
- 200 M Run:** The score below 23.963 was considered Very Good, between 23.963-25.184 was considered Good, between 25.184 -27.626 was considered Average, between 27.626 -28.847 was considered Poor although, the scores above 28.847 was considered Very Poor.

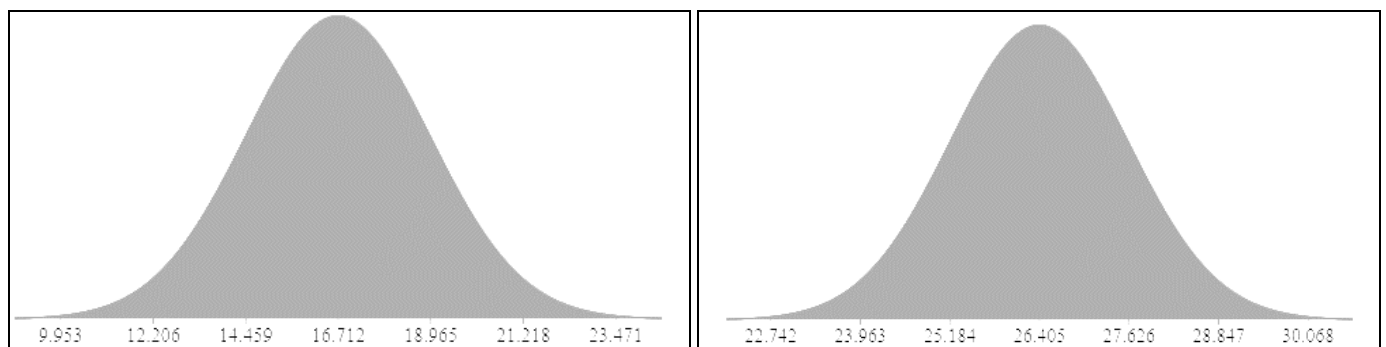


Fig 1: Area under the Normal Distribution of (i) 100 M Run (ii) 200 M Run.

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