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## Creating benchmarks for physical fitness among college students

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### Abstract

Physical fitness serves as a foundational platform for athletes, providing the necessary groundwork from which they can cultivate expertise in their respective sports. Athletes dedicate their efforts to enhancing specific attributes such as speed, strength, agility, flexibility, and endurance. This comprehensive state of physical well-being extends beyond mere appearance, encapsulating the harmonious functioning of the heart, lungs, and muscles. Recognizing the interconnectedness of body and mind, physical fitness plays a role in shaping not only physical capabilities but also mental acuity and emotional resilience.

The focus of the present study was to establish norms for physical fitness tailored to college students affiliated with Chaudhary Charan Singh University in Uttar Pradesh. One hundred male students, aged between 18 and 25 years, were randomly selected for participation in this research endeavor. The AAHPERD youth fitness test was employed as the primary research tool, evaluating aspects of explosive power, muscular endurance, agility, strength, speed, and cardiorespiratory endurance.

A battery of tests, including the standing broad jump, bent-knee sit-ups, shuttle run, pull-ups, 50-yard run, and the 600-yard run or walk test, was meticulously administered by the researchers. These tests served as quantifiable measures to assess the participants' physical capabilities. The results were then categorized into performance norms, ranging from poor to excellent, offering a nuanced understanding of the participants' fitness levels across multiple dimensions.

This study contributes not only to the empirical understanding of physical fitness norms but also holds practical implications for designing targeted fitness programs for college students. By discerning individual strengths and areas for improvement, educators and fitness professionals can tailor interventions to enhance the overall well-being of college students, recognizing the intricate relationship between physical fitness and academic success.

**Keywords:** AAHPERD youth fitness test, college students, physical fitness

### Introduction

The proficiency of athletes across a spectrum of games and sports continues to witness a remarkable upswing. Over the past century, with a pronounced surge in recent decades, there has been a transformative evolution in sports, particularly in the strategic cultivation of young talent. The contemporary approach to sports training diverges significantly from its early counterparts, embracing a more scientifically informed methodology. Essential to achieving heightened performance levels is the requisite adaptation of the organism, ensuring optimal development.

The concept of physical fitness, when delved into, encompasses a broad spectrum. At its core, physical fitness is the efficient utilization of the body, encompassing various aspects, with the ultimate goal of a wellfunctioning physique and organs. Achieving physical fitness implies that the body operates at its prime, free from hindrances posed by physical exhaustion or a lack of strength and vitality.

From the perspective of a coach, the term "physical fitness" takes on a nuanced meaning. For coaches, physical fitness connotes the capacity to effectively manage external loads imposed by diverse exercises, excelling in the physical demands inherent in various sports and game scenarios. It transcends a mere conceptualization of fitness and aligns with the practical prowess required to navigate the challenges presented by athletic endeavors.

Physical fitness is categorically divided into two types: skill-related and health-related physical fitness. Skill-related components encompass attributes such as speed, power, agility, balance, coordination, and reaction time. On the other hand, health-related components include cardiorespiratory endurance, muscular strength, muscular endurance, and flexibility.

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Endurance, a vital health-related component, entails the sustained delivery of oxygen and nutrients to tissues while efficiently removing waste. Muscular strength, measured through force exertion over brief periods, is evaluated through various lifting exercises, with push-ups gauging arm and shoulder endurance. Flexibility, defined as the ability to move joints and muscles through their complete range of motion, is assessed through exercises like the sit and reach, offering insights into the flexibility of the lower back and upper leg muscles.

The contemporary understanding of physical fitness is multifaceted, bridging the gap between theoretical concepts and practical athletic prowess. As athletes and coaches delve into the intricacies of physical fitness, a holistic approach encompassing both skill-related and health-related components emerges as the cornerstone for achieving optimal athletic performance.

Physical fitness is a multifaceted aspect of overall well-being, encompassing various dimensions such as strength, endurance, flexibility, and cardiovascular health. Recognizing the importance of cultivating and assessing physical fitness, particularly among college students, involves the establishment of benchmarks or standards. These benchmarks serve as reference points, enabling educators, health professionals, and students themselves to gauge and improve their physical well-being. This detailed exploration delves into the rationale, methodology, and potential impact of creating benchmarks for physical fitness within the context of college students.

### Rationale for Establishing Benchmarks

The rationale for creating benchmarks for physical fitness among college students is grounded in the understanding that this demographic represents a crucial stage in personal development. College life often brings about lifestyle changes, including altered eating habits, increased stress levels, and varying levels of physical activity. Establishing benchmarks allows educational institutions to address the holistic well-being of students, promoting healthy habits and preventing sedentary lifestyles.

### Objectives of Benchmark Creation

- **Assessment and Monitoring:** The primary objective is to assess the current physical fitness levels of college students accurately. Benchmarks provide a standardized framework for measuring and monitoring key fitness components.
- **Promoting Healthy Lifestyles:** By setting benchmarks, there is an implicit encouragement for students to adopt and maintain healthy lifestyles. This can include regular physical activity, balanced nutrition, and awareness of overall wellness.
- **Educational Intervention:** Benchmarks serve as an educational tool, enlightening students about the importance of physical fitness and motivating them to prioritize their health amidst academic pressures.

### Methodology for Benchmark Creation

- **Comprehensive Fitness Testing:** Establishing benchmarks involves conducting thorough fitness assessments. These assessments may include tests for cardiovascular fitness, muscular strength, flexibility, and body composition. Common tools, such as the

AAHPERD youth fitness test, may be employed to gather standardized data.

- **Data Analysis:** Collected data is then rigorously analyzed, taking into account various factors such as age, gender, and individual fitness components. Statistical methods help in determining average performance levels and categorizing them into distinct benchmarks.
- **Collaboration with Health Professionals:** The creation of benchmarks often involves collaboration with health and fitness professionals who can provide expertise in designing effective assessment tools and interpreting results accurately.

### Potential Impact and Benefits

- **Individualized Fitness Plans:** Benchmarks enable the creation of individualized fitness plans based on specific strengths and areas for improvement identified through assessments.
- **Health Promotion:** By promoting awareness of physical fitness and providing tangible benchmarks, educational institutions contribute to the broader promotion of health and well-being.
- **Improved Academic Performance:** Research suggests a positive correlation between physical fitness and academic performance. By prioritizing fitness, college students may experience enhanced cognitive function and overall academic success.

### Challenges and Considerations

- **Cultural Sensitivity:** Benchmarks should be culturally sensitive, considering diverse backgrounds and individual differences among college students.
- **Accessibility:** Institutions must ensure that fitness assessments and resources are accessible to all students, addressing potential barriers such as physical disabilities or financial constraints.
- **Continuous Evaluation:** Benchmarks should evolve with emerging research and changing societal norms, necessitating continuous evaluation and updates.

In conclusion, creating benchmarks for physical fitness among college students is a strategic endeavor that fosters a culture of health and well-being. By incorporating comprehensive assessments, collaborating with professionals, and promoting awareness, educational institutions can positively impact the lives of their students, laying the foundation for a lifetime of physical and emotional well-being.

### Objectives of the Study

The overarching aim of this study is to formulate comprehensive norms delineating the physical fitness standards tailored specifically for college students in the youth demographic.

### Subject Selection

In the scope of this research initiative, the chosen participants are exclusively male college students affiliated with Chaudhary Charan Singh University in Uttar Pradesh. The study's cohort consists of a carefully selected and representative sample, totaling 100 students, with an age range between 18 and 25.

## Procedure

The study's methodology involves subjecting the selected participants to a rigorous evaluation of their physical fitness utilizing the AAHPERD youth fitness test. This test, designed to measure various facets of physical fitness, serves as the primary tool for the assessment of college students' physical capabilities.

The AAHPERD youth fitness test encompasses a battery of skill-related physical fitness test items and variables, each contributing to a comprehensive understanding of the participants' physical aptitude. A detailed breakdown of these components and their corresponding correlation coefficients is provided in Table 1, enriching the analysis with precision and clarity.

A total of 100 male college students from Chaudhary Charan Singh University in Uttar Pradesh, India, constitute the research sample. The administration of the AAHPERD youth fitness test ensures a standardized and systematic approach to the assessment of physical fitness levels among the chosen subjects. This meticulous testing protocol aligns with the study's commitment to rigorously and accurately constructing norms for youth physical fitness within the college student demographic.

**Table 1:** AAHPERD Youth Fitness Test Variables and Coefficient of Correlation are as under

Test Serial Number	Test variables	Coefficient of Correlation
1.	Standing broad jump	Explosive power
2.	Bent knee sit-ups	Muscular endurance
3.	Shuttle run	Agility
4.	Pull-ups	Strength
5.	50-yard run	Speed
6.	600-yard run/walk	Cardiorespiratory endurance

## Statistical Procedure

The collected data obtained from the selected subjects through the AAHPERD youth fitness battery test underwent a comprehensive evaluation employing the statistical percentage method and analysis.

## Results

The determination of performance levels based on the established hull scale norms within the AAHPERD youth physical fitness test for college male students was conducted. The six key test components included (1) standing broad jump, (2) bent-knee sit-ups, (3) shuttle run, (4) pull-ups, (5) 50-yard run, and (6) 600-yard run/walk. The findings, categorizing student performance into poor, fair, average, good, very good, and excellent, are meticulously presented in Table 2. This nuanced breakdown offers a comprehensive depiction of the outcomes, facilitating a detailed understanding of the participants' proficiency across diverse aspects of the physical fitness evaluation.

## Discussion

Table 2 provides a detailed breakdown of the constructed norms for the standing broad jump, bent-knee sit-ups, shuttle run, pull-ups, 50-yard run, and 600-yard run/walk tests, presenting subject-wise performances categorized as poor, fair, average, good, very good, and excellent.

Upon scrutiny of the data in Table 2, it becomes evident that the construction of norms is further delineated by total percentage-wise performance. The analysis reveals a nuanced distribution, indicating that 59% of the total percentage falls under the poor category, 86% under fair, 136% under average, 123% under good, 131% under very good, and 65% under excellence. This intricate breakdown offers a comprehensive perspective on the distribution of performances across the diverse elements of the AAHPERD youth fitness test.

Moreover, Table 2 extends its insight by presenting the gross average wise performance. In this context, the data elucidates that the constructed norms result in a gross average of 9.83 for poor performance, 14.33 for fair performance, 22.66 for average performance, 20.50 for good performance, 21.83 for very good performance, and 10.83 for excellence. This refined assessment provides a more holistic understanding, accounting for the overall distribution of performance categories in terms of gross averages.

In summation, the data analysis from Table 2 indicates that a majority of students have achieved average, good, and very good performances according to the constructed norms of the AAHPERD youth fitness test.

**Table 2:** Significance of difference of the hull scale norms in the performance of AAHPERD youth fitness test of college men students

Test Serial Number	Variable	N	Poor %	Fair %	Average %	Good %	Very good %	Excellence %
1.	Standing broad jump	100	10	16	20	24	17	13
2.	Bent knee sit-ups	100	08	09	22	16	31	14
3.	Shuttle run	100	09	12	19	20	29	11
4.	Pull-ups	100	12	17	29	14	17	11
5.	50-yard run	100	14	21	29	20	14	02
6.	600-yard run/walk	100	06	11	17	29	23	14
Total percentage (%)			59	86	136	123	131	65
Gross average (%)			9.83	14.33	22.66	20.50	21.83	10.83

This comprehensive breakdown offers valuable insights into the varying degrees of proficiency exhibited by the participants across the evaluated physical fitness parameters.

## Conclusion

Based on the outcomes derived from the meticulous statistical analysis of the data pertaining to physical fitness variables, it is evident that the implementation of AAHPERD youth fitness test norms has exerted a significant positive impact on

various facets of physical fitness. These include, but are not limited to, enhancements in strength, speed, explosive power, agility, and cardiorespiratory endurance.

Achieving and maintaining physical fitness throughout one's life necessitates a perpetual awareness of diverse parameters that collectively contribute to overall health and well-being. The pursuit of excellence in sports demands not only skill and technique but also a heightened level of fitness and endurance. In the realm of sports, success is intrinsically tied

to an individual's emotional well-being. Physical fitness, therefore, plays a pivotal role in shaping the emotional experiences of athletes.

Furthermore, the synergy between physical fitness and sports wellness is augmented by the integration of quality nutrition and proper training. These factors collectively form the bedrock upon which an athlete's physical and emotional resilience is built. The pursuit of overall fitness extends beyond the confines of sports and permeates various aspects of life. It serves as a cornerstone for a healthy and fulfilling existence, reinforcing the interconnectedness of physical well-being with emotional and overall life satisfaction.

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