



P-ISSN: 2394-1685  
E-ISSN: 2394-1693  
Impact Factor (ISRA): 5.38  
IJPESH 2021; 8(3): 504-505  
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[www.kheljournal.com](http://www.kheljournal.com)  
Received: 19-04-2021  
Accepted: 15-05-2021

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## Standardization of physical fitness test on selected physical fitness variables for physical education entrance in Nagpur district physical education colleges

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### Abstract

The aim of the present study was designed to standardize physical fitness test for Physical Education entrance in Nagpur District Physical Education Colleges. To achieve the purpose, the investigator formed the research method in three phases, namely, Pilot Study Phase, Testing Phase for Validity and Reliability and Testing Phase for Objectivity. During the Testing Phase for Reliability and Validity of tests standardized, the researcher found the reliability of the tests through test – retest (intra class) methods. Reliability of the constructed tests were also done by inter- rater (outside expert) with the 60 subjects, 30 in the age group of 18 to 21 and 30 in the age group of 22 to 25 were selected for this purpose. To ascertain the validity (criterion related and construct related) the athletic ability was determined by three experts when the selected subjects were in actual competitions. The obtained athletic ability was related with the skill scores of the subjects to determine criterion related validity. To determine the construct related validity the athletic ability and physical fitness scores of the subjects in the age group of 18 to 21 and in the age group of 21.1 to 25 were found and related so that to find the validity of the tests for both the age groups. To find out the objectivity of the tests, the investigator administered the tests for 300 subjects. Based on the scores, hull scales were computed and the subjects were classified and thereby the objectivity of the skill tests could be proved. This study would help the Physical Education directors, Physical Education teachers and coaches in selecting the team and evaluate performance.

**Keywords:** Standardization, norm, fitness, skill etc

### Introduction

RTM Nagpur University, Nagpur, have been formed and all the physical education colleges in four districts viz., Bhandara, Gondia, Nagpur and Wardha in the State of Maharashtra have been affiliated with this University. It became the prime responsibility of the University to frame uniform selection tests and norms for selection of candidates for physical education courses, which would remove the disparities at the admission stage and might remove the imbalances in the finish product, namely, the physical education teachers trained through this University and affiliated colleges. Hence, the investigator was interested to standardize physical fitness tests through constructing norms for selected physical fitness variables.

### Statement of the Problem

The aim of the present study was to standardize the physical fitness tests conducted by different physical education colleges and to construct norms for the physical fitness variables that can be used to test candidates seeking admission in various colleges affiliated under the RTM Nagpur University, Nagpur, Maharashtra.

### Selection of Subjects

The purpose of this study was to standardize a battery of physical fitness tests for RTM Nagpur University. To achieve this purpose 300 students, were randomly selected from five physical education colleges, at the age group of 18 to 25 years. The newly standardized batteries of physical fitness test were administered on the subjects, which actually to measure the capability of each individual candidate. The standardized physical fitness tests were correlated with subjectively assessed athletic ability of the subjects.

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## Result and Discussion

**Table 1:** Test and Retest Mean, Standard Deviation and Correlation Values of Speed, Explosive Power, Abdominal Strength, Muscular Endurance and Athletic Ability

Variable	Mean	Std. Deviation	N	Correlation	Sig.
Speed	14.76	0.929	60		
Speed Retest	14.74	0.949	60	0.984*	
Explosive Power	1.99	0.324	60		
Explosive Power Retest	1.98	0.333	60	0.995*	
Abdominal Strength	33.72	7.812	60	0.984*	.000
Abdominal Strength Retest	33.18	7.469	60		
Muscular Endurance	6.12	3.975	60	0.992*	
Muscular Endurance Retest	6.18	3.877	60		
Athletic ability	33.23	7.298	60		
Athletic ability Retest	33.42	6.917	60	0.998*	

\*Correlation is significant at the 0.01 level

As denoted in Table 1 mean values of test and retest on speed, explosive power, abdominal strength, muscular endurance and athletic ability has relationship at 0.01 level with the r value of 0.984, 0.995, 0.984, 0.992 and 0.998 respectively

**Table 2:** Classification of Subjects Based on the Hull Scale Norms

Speed	Hull Scale	0-25	25-50	50-75	75-100
	Number of Subjects	7	144	129	120
Explosive Power	Hull Scale	0-25	25-50	50-75	75-100
	Number of Subjects	10	127	152	11
Abdominal Strength	Hull Scale	0-25	25-50	50-75	75-100
	Number of Subjects	17	128	148	7
Muscular Endurance	Hull Scale	0-25	25-50	50-75	75-100
	Number of Subjects	-	174	99	27

As shown in Table IV total number of 300 subjects were classified into four category based on the hull scale norms of below 25, 50 and above 50, 75 on the athletic ability.

### Discussion on Objectivity of the Tests

To achieve the purpose of the study selected 300 subjects were classified based on the constructed hull scale norms for the raw scores obtained through speed, explosive power, abdominal strength, muscular endurance.

### Conclusion

It was concluded from the results of the study that the newly designed physical efficiency test has the reliability. Hence, it was proved by test and retest method. It was concluded that the speed, explosive power, abdominal strength and muscular endurance measures the physical efficiency (athletic ability) of an individual. It was concluded that constructed hull scale norms can be used to classify the subjects on athletic ability.

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