NORMS CONSTRUCTION AND PHYSICAL FITNESS TEST STANDARDIZATION FOR PHYSICAL EDUCATION ENTRANCE IN KASHMIR UNIVERSITY

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Abstract

Physical Education is education through physical activities in which body is the primary tool. Its aim is the same as that of education to bring about an all round development of an individual and make him an effective member of the society. Physical education is the education of body and mind. The purpose of this study was to standardize a battery of physical fitness tests and skill tests for selected games, namely, basketball, football and hockey for entrance test for Kashmir University. To achieve the 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 and skill tests were administered on the subjects, which actually to measure the capability of each individual candidate. It was concluded from the results of the study that the newly designed skill test has satisfied the reliability to be the standardized tests.

Keywords: Physical Education; Physical Fitness Test; Entrance

1. Introduction

Physical Education is education through physical activities in which body is the primary tool. Its aim is the same as that of education to bring about an all round development of an individual and make him an effective member of the society. Physical education is the education of body and mind. Plato said, "body and mind should be driven alike: like a pair of horses hitched to a shaft". Physical Education is defined as "the accumulation of wholesome experiences, through participation in large muscle activities that promote growth and development". According to Nash, "the aim of physical education is to have healthy, skillful, emotionally adjusted individuals integrated with work while, vocational and recreational activities in home, in community in which he lives." According to Nixon & Cozens, "organised physical education should aim to make the maximum contribution to the optimum development of the individuals' potentialities in all phases of life."

In addition to being a part of education it must be educational as well. By the apparent technology I mean that it must specifically seek to relate its objectives (Mcclay, 1970). Charles Bucher purposes that, "Physical Education on integral part of the total education process, is a field of endeavour that has as its aim, the development of physically, mentally, emotionally and socially fit citizens through the medium physical activities that have been selected with a view to realizing these outcomes" (Bucher, 1972). According to Shermon (1934), Physical education is a part of education. Physical education is well thought is a process of education through interesting self directed activity on the part of the student. Fall in line with the changing phenomena in physical education and the efforts put by different social minded bodies like young men's Christian associations the government has accepted the concept that physical education is an integral part of education. The central government retained the vital affairs of education, by coordinating and formulating the directives to the states keeping in view the national objectives to be achieved. (Thousands of social forces started operating in the life of an Indian citizen. As a result in memorable schools, colleges and many new universities case into existence to give impetus to the course of education, on sure industry development, to helved a free revolution and to raise the thousands of living of millions of country men).

The Kashmir University and its affiliated colleges are conducting physical fitness test for the intake of students every year. Physical fitness is very much essential for the students who are

seeking admission in physical education colleges. The students are ranked and admitted based upon their physical fitness test performance. Bearing all the above aspects in mind, the research scholar made an honest attempt to standardise the physical fitness tests conducted by different physical education colleges and to construct norms for the physical fitness and skill variables that can be used to test candidates seeking admission in various colleges affiliated under the Kashmir University. Thus, the purpose of this study was to standardize the physical fitness and skill tests for physical education entrance tests in Kashmir University and to construct norms for the newly standardized tests.

2. Methodology

The study was designed to standardise physical fitness and skill tests for physical education entrance in Jammu and physical education Universities and 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 pilot study phase twenty subjects were involved for standardisation of physical fitness and skills of selected three games, refinement process of the battery of physical fitness and skill tests and finalisation of the tests to be standardised. During the testing phase for reliability and validity of tests standardised, 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 and playing ability were determined by three experts when the selected subjects were in actual competitions. The obtained athletic and playing abilities were related with the skill scores of the subjects to determine criterion related validity. To determine the construct related validity the athletic ability and playing ability and physical fitness and skill 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.

Pilot Study and Finalization of Tests

In the pre pilot study process the investigator gained rough idea on the tests to be standardised and after the selection ofthe physical fitness components and skills and tests. Before planning further the investigator consulted and discussed with experts and the guide and the first draft of tests and testing procedures were prepared. A pilot study was made on twenty candidates selected for physical education courses, to understand the difficulties in administering the tests and to see the accuracy in measuring the physical fitness and skills. After understanding difficulties and draw backs, modification and changes were made in the testing procedures and measurements after discussing with the experts and guide. After the modification the tests were tried again and finalised. On each stage of testing the battery of tests the results were analysed through statistical application. Thus the test battery consisting of physical fitness tests and skill tests were formed with the able guidance of the guide and the experts in the field.

Criterion Measures

In general, the following are listed as criteria to be reviewed in the selection of a test to be used in measuring achievement; (1) validity, (2) reliability, (3) objectivity, and (4) norms. Barrowand McGee (1971) have made the statement, "If a test is accompanied by norms, its usefulness is enhanced." Thus, the criterion measures for this study was to test tests, namely, (1) Speed (2) leg explosive power (3) abdominal strength (4) muscular endurance and skills test in basketball, football and hockey, namely (1). Passing, (2) Dribbling and (3) Shooting.

Reliability of Data

The reliability of the data was ensured through (1) reliability of instruments used (2) reliability of subjects and (3) reliability of testers.

Collection of Data

The data for the variables (speed, leg explosive power, abdominal strength and muscular endurance, dribbling, passing and shooting in basketball, football and hockey) to construct norms were collected by administering the appropriate standard tests. The procedure for administering thetest is explained below. Before administering the test the purpose and procedure were explained to the subjects in details.

Statistical Techniques

The primary purpose of this study was to standardize a battery of objective physical fitness tests and skill test to measure the physical fitness and skill proficiency for physical education course of Kashmir University. The standardized physical fitness and skill tests were tested for its reliability, validity and objectivity under different phases and the data were collected for statistical treatment. To arrive at meaningful statistics the following statistics were computed.

3. Results

The standardised physical fitness and skill tests were tested for its reliability, validity and objectivity under different phases and the data were collected for statistical treatment. To arrive at meaningful statistics the following statistics were computed.

The mean and standard deviation for the physical fitness tests and playing abilities of basketball, football and hockey were assessed subjectively, and the scores of standardised tests were calculated separately. Simple correlation was computed to analyze the relationship between the test – retest scores of each test and thereby establish the intra class reliability of the tests standardised. Multiple regression analysis was made to examine the relationship between the subjectively assessed athletic ability of the subjects with scores of the physical fitness tests standardised and thereby establish criterion related validity of the skill tests constructed. And, norms were computed based on each physical fitness and skill tests standardised and the subjects were classified according to their ability, thereby establishing the objectivity of the skill tests constructed.

Table I
Test and Retest Mean, Standard deviation and Correlation values of Speed

Variable	Mean	Std. Deviation	N	Correlation	Sig.
Speed	14.76	0.929	60		
Speed Retest	14.74	0.949	60	0.984*	.000

*Correlation is significant at the 0.01 level

As denoted in Table I mean values of test and retest on speed was 14.76s and 14.74s. Test and retest values on speed has relationship at 0.01 level with the r value of 0.984.

Table II

Test and Retest Mean, Standard deviation and Correlation values of Explosive Power

Variable	Mean	Std. Deviation	N	Correlation	Sig.
Explosive Power	1.99	0.324	60	0.995*	.000
Explosive Power Retest	1.98	0.333	60		

*Correlation is significant at the 0.01 level

As noted in Table II mean values of test and retest on explosive power was 1.99mts and 1.98mts. Test and retest values on explosive power has relationship at 0.01 level with the r value of 0.995.

Table III
Test and Retest Mean, Standard deviation and Correlation values of Abdominal Strength

Variable	Mean	Std. Deviation	N	Correlation	Sig.
Abdominal Strength	33.72	7.812	60	0.984*	.000
Abdominal Strength Retest	33.18	7.469	60		

*Correlation is significant at the 0.01 level

As mentioned in Table III mean values of test and retest on abdominal strength was 33.72 and 33.18. Test and retest values on abdominal strength has relationship at 0.01 level with the r value of 0.984.

Table IV

Test and Retest Mean, Standard deviation and Correlation values of Muscular Endurance

Variable	Mean	Std. Deviation	N	Correlation	Sig.
Muscular Endurance	6.12	3.975	60		
Muscular Endurance Retest	6.18	3.877	60	0.992*	.000

*Correlation is significant at the 0.01 level

As shown in Table IV mean values of test and retest on muscular endurance was 6.12 and 6.18. Test and retest values on muscular endurance has relationship at 0.01 level with the r value of 0.992.

Table V
Test and Retest Mean, Standard deviation and Correlation values of Athletic ability

Variable	Mean	Std. Deviation	N	Correlation	Sig.
Athletic Ability	33.23	7.298	60		
Athletic ability Retest	33.42	6.917	60	0.998*	.000

*Correlation is significant at the 0.01 level

As given in Table V mean values of test and retest on athletic ability was and 33.42. Test and retest values on athletic ability has relationship at 0.01 level with the r value of 0.998.

In the present study the variables selected to measure the physical efficiency of the subject such as speed, explosive power, abdominal strength and muscular endurance were tested and retested to prove the reliability of the tests. The obtained r-values of 0.984, 0.995, 0.98c4 and 0.992 were significant at 0.0l level. (p>.01)

To assess the basketball playing ability three tests were constructed namely passing in basketball, dribbling in basketball and shooting in basketball. Selected subjects were tested and retested on passing, dribbling and shooting in basketball. The obtained r-values of 0.996, 0.977 and 0.952 were significant at 0.01 level. (p>.01)

To assess the football playing ability three tests were constructed namely passing in football, dribbling in football and shooting in football. Selected subjects were tested and retested on passing, dribbling and shooting in football. The obtained r-values of 0.962, 0.981 and 0.966 were significant at 0.01 level. (p>.01)

To assess the hockey playing ability three tests were constructed namely passing in hockey, dribbling in hockey and shooting in hockey. Selected subjects were tested and retested on passing, dribbling and shooting in hockey. The obtained r-values of 0.976, 0.921 and 0.977 were significant at 0.01 level. (p>.01).

4. Discussion

To achieve the purpose of the study in determining the validity of the newly constructed physical efficiency and skill tests in basketball, football and hockey multiple correlation was computed by dividing the subjects into two categories. From the multiple correlation analysis, it was evident that the combined contributions of speed, explosive power, abdominal strength and muscular endurance to athletic ability was significant. From the obtained value of multiple correlation, it was concluded that the speed, explosive power, abdominal strength and muscular endurance together contribute to athletic ability of the subjects in the age group of 18 to 21 years. From the multiple correlation analysis, it was proved that the combined contributions of speed, explosive power, abdominal strength and muscular endurance to athletic ability was significant. From the obtained value of multiple correlation, it was concluded that the speed, explosive power, abdominal strength and muscular endurance together contribute to athletic ability of the subjects in the age group of 21.1 to 25 years. From the obtained value of multiple correlation, it was concluded that the passing, dribbling and shooting together contribute to basketball playing ability of the subjects in the age group of 18 to 21 years.

The study was designed to standardize physical fitness and skill tests for Physical Education entrance. 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 and playing ability were determined by three experts when the selected subjects were in actual competitions. The obtained athletic and playing abilities were related with the skill scores of the subjects to determine criterion related validity.

To determine the construct related validity the athletic abilityand playing ability and physical fitness and skill 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.

5. Conclusion

It was concluded from the results of the study that the newly designed physical efficiency test has the reliability. The newly designed skill test in basketball, football and hockey has satisfied the reliability to be the standardized tests.

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