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## Assessment And Construction Of Norms For Agility Among College Students Of Kashmir Region

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**Abstract:** The purpose of the study was to compare and construct norms for agility among undergraduate male college students of Kashmir region of union territory of Jammu and Kashmir. To achieve the purpose 2412 under graduate male college students of age group 19 to 21 years from different colleges in different districts of north, central and south divisions of Kashmir region were randomly selected as subjects. Agility was selected as criterion variable and was measured by 4 × 10 meters shuttle run. The collected data was analyzed by using analysis of variance (ANOVA) and if obtained 'F' ratio was found to be significant; Scheff's post hoc test was applied to know the paired mean difference. The level of significance was fixed at 0.05. To construct norms, Hull scale value of respected classes was continuously added and subtracted from the respective means for determining the values from zero to hundred in the scale. The scores were further classified in to five grades i.e. excellent, good, average, poor and very poor. The results of this study indicate that male college students of north, central and south divisions of Kashmir region significantly differ on agility. Also, the results of the study revealed that irrespective of age and division maximum number of male college students falls in the category of average. Those who score below the 50<sup>th</sup> deciles on agility in their respective age group should be encouraged to improve their agility. National level special fitness programme will be designed and implemented to the poor fitness students.

**Keywords:** Physical fitness, Agility, Norms and College students.

### Introduction:

Physical fitness is a physiological state of well being that provides the foundation for the activities of daily life, a degree of security against chronic illness and a foundation for participation in sports. Fundamentally, physical fitness represents a set of attributes regarding how well one carries out physical activity. It is the combination of health and

skill – related aspects of physical fitness which is imperative in shaping individuals in sports and games [2]. Daily involvement in physical activity is very much required to maintain a healthy life style and this is the issue which is investigated through the various researchers from the last 30 years in every part of the world [16, 17]. The lack of involvement in physical activity contributes to an increase in the process of ageing, which is one of the key causes for late adolescence and early adulthood. Currently, students from multiple colleges have shown that they are likely to be physically inactive [6, 12]. The medical survey found that approximately one to two thirds of university students do not participate in appropriate PA to take healthy advantages [5, 4, 14]. Researchers show that daily involvement in adequate PA improves physical and psychological health of an individual [18].

Current evidence states that sedentary behavior (SB) is very prevalent on a global scale among children. For example, a recent Canadian report revealed that only 7 % of children and young people aged 6-19 years engage in at least one hour of moderate to vigorous physical activity (PA) every day, thus meeting the latest PA guidelines of Canada, the United States, the United Kingdom, Australia and the world health organization (WHO) [15]. However, number of researchers have reported that a maximum of university students are not actively engaged in adequate PA hours [5, 10]. Even, studies conducted by Deng Xiaofen and colleagues [6] have shown that university students follow the same PA level trend as their years of college education have advanced.

Daily engagement in a strength and conditioning programme for greater efficiency has been shown to have health benefits for both adults and children. The use of measures designed to evaluate physical endurance, strength and power as well as speed and agility provides both the athletic performance coach and the athlete with a reference point for setting targets and evaluating improvements [7, 11]. It is therefore essential to tailor PA programmes customized for children and adolescents that are formulated on evidence – based practice. In addition, in order to access the existing level of fitness in adolescents, in the interest of appropriate exercise prescription, a suitable set of tests must be extended to teenagers and adolescents. Also, an effective fitness regime will allow the measurement of progress during and after physical activity interventions. Most significantly fitness testing is the most significant usage as part of the comprehensive health-related curriculum is to educate our youth about the associated health benefits with a daily workout routine [13].

Agility is an essential skill-related fitness component that determines the physical status of an individual. Agility is “a rapid whole-body movement in response to a stimulus, with a change of running direction” [18]. So, in team sports, agility skills are not only limited to the quick change of direction but also include qualities like perception and decision making, as well as speed of expression, showing that agility in the context of team sport is multifunctional [8].

Agility involves moving the upper body segments in order to change the running direction quickly without losing the balance [1]. Performance in agility run ( shuttle run) depends upon factors like speed of movement, acceleration ability, stride length and the

ability to change direction quickly in the shortest possible time [9]. Improvement of these abilities is only possible through regular and systematic physical training and through participation in multidimensional physical activities of different games and sports.

The physical activities at colleges are irrelevant to the need of the physical capacities of their students. According to the national education policy norms of physical fitness may give common criteria to all the students in India. But the students in the state on different geographical region have different environment and the lifestyle. So that, the norms of national level have not been attained by the students in the different regions in India. Hence, there is a need to fix the norms for regional wise that may able to find the capacity and give special attention to the students in physical fitness programs. The present investigation is intended to assess the agility of male college students and also to construct norms for different age group male students on agility.

The main objectives of this study were:

- To determine the level of fitness (agility) among college students.
- To construct norms for male college students on agility.

## **Material and Methods:**

### **Subjects:**

To obtain a true and representative sample from all three divisions namely North, South and Central divisions of Kashmir region and to make the study more authentic and reliable the investigator chalked out a list of various Government Degree Colleges located in different districts. A total of 2412 undergraduate male college students of age group 19 to 21 years from different colleges in different districts of north, central and south divisions of Kashmir region were randomly selected. All the subjects, after having been informed about the objectives and protocol of the study, gave their consent and volunteered to participate in this study.

### **Study Design:**

Cross-sectional study design was used. The participants of the study were tested the field test at twice to assess the agility. All testing was conducted under the direct supervision of college principles and physical training instructors of respective colleges. Prior to all data collection sessions, subjects completed a supervised warm – up and were permitted to practice the tests being administered by the researcher. After that data was collected with the help of trained assistants.

### **Variable and Test:**

#### **Agility (Shuttle Run):**

The agility of the subjects in running and changing direction was measured by 4 × 10 meters shuttle run. The subjects stand behind the starting line, which is drawn parallel to another line on the ground at a distance of 10 meters. There were two wooden blocks

positioned on one of the sides. The subjects position his front foot behind the line on the “ready” signal. The subject sprints on the “go” signal to the opposite line, picks up a wooden block, returns and positions it on or behind the starting line. Turn and run back to grab and bring the second block across the finishing line. The timekeeper stopped the watch as soon as the block was set on the ground and recorded the time. Two trails with an interval during which another pair of subjects were tested. The final score of the test will be reported as the maximum time taken by the subjects to position both blocks behind the starting line.

### Statistical Analysis:

The collected data was analyzed by using analysis of variance and if obtained “F” ratio was found to be significant; Scheffe’s post hoc test was applied to know the paired mean difference. The level of significance was fixed at 0.05. To construct norms, Hull scale value of respected classes was continuously added and subtracted from the respective means for determining the values from zero to hundred in the scale. The scores were further classified into five grades i.e. excellent, good, average, poor and very poor.

### Results & Discussion:

**Table 1.1: ANOVA - Agility among College Students of Kashmir Region:**

Age		North Kashmir	Central Kashmir	South Kashmir	SOV	SS	DF	MS	F
19 Yrs	Mean	10.59	10.87	11.14	BG	40.86	2	20.43	48.99
	SD	0.58	0.74	0.59	WG	334.08	801	0.41	
20 yrs	Mean	10.68	10.94	11.16	BG	31.15	2	15.57	41.14
	SD	0.66	0.63	0.53	WG	303.22	801	0.37	
21 Yrs	Mean	10.79	11.06	11.21	BG	24.04	2	12.02	31.38
	SD	0.70	0.62	0.64	WG	306.75	801	0.38	

Significant at 0.05 level of confidence

(Table value for significance at 0.05 level with df 2 and 801 is 3.00)

Table 1.1 shows the mean, standard deviation and ‘F’ value of agility among college students of different age groups (19, 20 & 21 years) of North Kashmir, Central Kashmir and South Kashmir divisions of Kashmir region of Union territory of Jammu and Kashmir. From the table it was clear that obtained “F” values 48.99, 41.14 and 31.38 are greater than the table value of 3.00 required to be significant at 0.05 level with df 2 and 801. The results of the study showed that, significant difference was found among the north, central and south divisions of Kashmir region on agility for 19-, 20- and 21-years old college students on agility. Hence to find out the paired mean difference Scheffe’s post hoc test was applied and the results were presented in table 1.2.

**Table 1.2: Scheffe's Post Hoc Test for the Difference between Means Old Male College Students of Kashmir Region on Agility:**

Age	North Kashmir VS Central Kashmir	North Kashmir VS South Kashmir	Central Kashmir VS South Kashmir
19 Years	0.28	0.55	0.27
20 Years	0.26	0.48	0.21
21 Years	0.26	0.41	0.14

Significant at 0.05 level of confidence

Table 1.2 shows that mean difference between North and central Kashmir, north and South Kashmir, and central and south Kashmir male college students of 19, 20 and 21 years on agility. The results of Scheffe's post hoc test shows that North Kashmir male college students were better on agility than Central Kashmir and South Kashmir male college students of different age groups. It was also found that agility was better for North Kashmir division followed by central division and south division of Kashmir region respectively.

#### **Construction of Norms:**

For preparing norms, mean and standard deviation of the scores of 19, 20 and 21 years old male college students on agility were computed. The calculated standard deviations were multiplied by 0.07 to get the hull scale value. The hull scale value is serially added and subtracted to get the percentile scale values for 19, 20 and 21 years old male college students and are given in the table 1.3.

**Table 1.3: Norms for Male College Students of Kashmir Region on Agility:**

Score	North Kashmir			Central Kashmir			South Kashmir		
	19years	20years	21years	19years	20years	21years	19years	20years	21years
100	12.59	12.98	13.24	13.42	13.14	13.21	13.19	13.01	13.41
90	12.19	12.52	12.75	12.91	12.7	12.78	12.78	12.64	12.97
80	11.79	12.06	12.26	12.4	12.26	12.35	12.37	12.27	12.53
70	11.39	11.6	11.77	11.89	11.82	11.92	11.96	11.9	12.09
60	10.99	11.14	11.28	11.38	11.38	11.49	11.55	11.53	11.65
<b>50</b>	<b>10.59</b>	<b>10.68</b>	<b>10.79</b>	<b>10.87</b>	<b>10.94</b>	<b>11.06</b>	<b>11.14</b>	<b>11.16</b>	<b>11.21</b>
40	10.19	10.22	10.3	10.36	10.5	10.63	10.73	10.79	10.77
30	9.79	9.76	9.81	9.85	10.06	10.2	10.32	10.42	10.33
20	9.39	9.3	9.32	9.34	9.62	9.77	9.91	10.05	9.89
10	8.99	8.84	8.83	8.83	9.18	9.34	9.5	9.68	9.45
0	8.59	8.38	8.34	8.32	8.74	8.91	9.09	9.31	9.01
<b>Mean</b>	<b>10.59</b>	<b>10.68</b>	<b>10.79</b>	<b>10.87</b>	<b>10.94</b>	<b>11.06</b>	<b>11.14</b>	<b>11.16</b>	<b>11.21</b>
<b>S. D</b>	<b>0.58</b>	<b>0.66</b>	<b>0.70</b>	<b>0.74</b>	<b>0.63</b>	<b>0.62</b>	<b>0.59</b>	<b>0.53</b>	<b>0.64</b>

On the basis of above constructed table, the subjects were given qualitative grading as follows.

**Table 1.4: Percentage of Qualitative Grading for the Constructed Norms for Male College Students of Kashmir Region on Agility:**

Score	Qualitative Grading (%)	North Kashmir			Central Kashmir			South Kashmir		
		19 Years	20 Years	21 Years	19 Years	20 Years	21 Years	19 Years	20 Years	21 Years
0 – 20	Very poor	1.86	3.35	1.86	3.35	2.23	3.73	3.35	3.73	2.61
21 – 40	Poor	19.40	20.89	17.53	15.29	12.68	12.31	14.55	11.94	11.56
41 – 60	Average	61.56	55.59	60.82	56.71	62.68	54.85	55.59	56.34	68.28
61 – 80	Good	16.04	19.02	18.28	24.62	20.89	27.23	26.11	25	16.04
81-100	Excellent	0.37	0.37	-	-	-	-	-	-	-

Table 1.4 shows the qualitative (percentage) grading for the constructed norms of north, central and south divisions of Kashmir region male college students of 19, 20 And 21 years on agility. From the table it is clear that

North Kashmir college students on agility for 19, 20 and 21 years were 1.86%, 3.35% and 1.86% which falls in the category of very poor, 19.40%, 20.89% and 17.53% falls in the category of poor, 61.56%, 55.59% and 60.82% falls in the category of average, 16.04%, 19.02% and 18.28% falls in the category of good and 0.37%, 0.37% and 0% falls in the category of excellent respectively.

Central Kashmir college students on agility for 19, 20 and 21 years were 3.35%, 2.23% and 3.73% which falls in the category of very poor, 15.29%, 12.68% and 12.31% falls in the category of poor, 56.71%, 62.68% and 54.85% falls in the category of average, 24.62%, 20.89% and 27.23% falls in the category of good and 0%, 0% and 0% falls in the category of excellent respectively.

South Kashmir college students on agility for 19, 20 and 21 years were 3.35%, 3.73% and 2.61% falls in the category of very poor, 14.55%, 11.94% and 11.56% falls in the category of poor, 55.59%, 56.34% and 68.28% falls in the category of average, 26.11%, 25% and 16.04% falls in the category of good and 0%, 0% and 0% falls in the category of excellent respectively.

From the qualitative grading it was clear that North, Central and South divisions of Kashmir region 19 years male college students on agility were 21.26%, 18.64% and 14.55% falls in the category of very poor and poor. 20 years male college students on

agility were 24.24%, 14.91% and 15.66% falls in the category of very poor and poor and 21 years male college students on agility were 19.39%, 16.04% and 14.17% falls in the category of very poor and poor. Hence it was concluded that irrespective of age and divisions minimum of 14.55% (19 Yrs), 14.91% (20 Yrs) and 14.17% (21 Yrs) male college students fall in the category of very poor and poor.

### **Conclusion:**

The results clearly indicate that male college students of North, Central and South divisions of Kashmir region significantly differ on agility. Also, an attempt has been made to prepare the norms for 19, 20 and 21 years old male college students of Kashmir region on agility. The results of the study revealed that irrespective of age and division maximum number of college students falls in the average category. Those who score below the 50<sup>th</sup> deciles on agility in their respective age group should be encouraged to improve their agility. The current study provides local data for the educational institutions to become more aware on the need to implement programs to promote physical activity and physical fitness among college students. Future research needs to examine the strategies on how to increase physical activity among college students to help ensure that they remain active throughout their college life.

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