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Construction of norms and distribution of grades of skills of volleyball players

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Abstract
The present study was conducted to construct norms and distribution of grades of skills of volleyball players. For the purpose of the present study, Five Hundred (N=500), Male Volleyball Players of under-16 years were selected. The Serve Test was used to test the skill in the volleyball serve consistency and accuracy. The Set-Up Test was used to measure the set-up ability in volley ballers and Fore-Arm Pass Test was used to measure the accuracy, height and consistency in the fore-arm pass. The data, which was collected by administering tests, was statistically treated to develop for all the test items. In order to construct the norms, Percentile Scale was used. Further, the scores were classified into five grades i.e., very good, good, average, poor and very poor. In Service, the scores below 10.556 are considered very poor, from about 10.556-12.178 is considered poor, 12.178-15.422 is considered average, 15.422-17.044 is considered good and the scores above 17.044 are considered very good. In Setting, the scores below 16.922 are considered very poor, from about 16.922-18.701 is considered poor, 18.701-22.259 is considered average, 22.259-24.038 is considered good and the scores above 24.038 are considered very good. In Fore-Arm Pass, the scores below 18.404 are considered very poor, from about 18.404-20.837 is considered poor, 20.837-25.703 is considered average, 25.703-28.136 is considered good and the scores above 28.136 are considered very good.

Keywords: Norms, grades, service, setting, fore-arm pass

Introduction
Skill is an athlete's ability to choose and perform the right techniques at the right time, successfully, regularly and with a minimum of effort. One of the most appealing reasons for talent research in sport is the hope that future talent can be predicted in "key transferable skills (Abbott A., Button C., Pepping J.G., and Collins D., 2005) [1]. An individual's ability to perform compound motor tasks has been considered to be a possible determinant of physical fitness. (Barnett L.M., Beurden E.V., Morgan P.J., Brooks L.O., and Beard J.R., 2008, Kantomaa M.T., Purtsi J., Taanila A.M., Remes J., Viholainen H., Rintala P., and Tammelin T.H., 2011) [4]. The construction of norms of athletic excellence evidenced in sports activities cemented communities of participation who valorized rigorous sorts of physical discipline in preparation for athletic competition and in expressing the highest degree of athletic skill. For this, research is systematically conducted to identify the factors that help in achieving mastery of skill, which a player can attain through proper coaching and evaluation (Vidyacharan S., 1982).
Volleyball is a team sport played at all competitive levels (e.g., youth, Olympic, and professional) and places an emphasis on explosive movements such as jumping, hitting, and blocking (Marques, Gonzalez-Badillo, & Kluka, 2006) [5]. It requires players to compete in frequent short bouts of high-intensity exercise, followed by periods of low-intensity activity (Gabbett & Georgieff, 2007) [3].

2. Material and Methods
2.1 Selection of Subjects
For the purpose of the present study, Five Hundred (N=500), Male Volleyball Players of under-16 years were selected.

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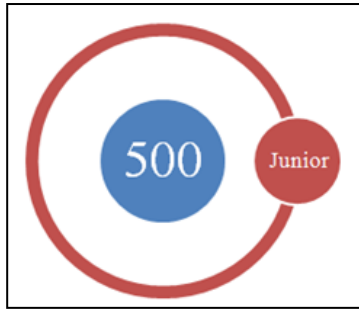
Fig 1: Distribution of Subjects

2.2 Selection of Variables

The research investigator reviewed all the available scientific literature books, journals, periodicals, magazines and research papers pertaining to the study. Taking into consideration of the importance of variables and the relevance of the study the following skills were selected for this investigation.
1. Service
2. Setting
3. Fore-Arm Pass

3. Statistical Analysis

The data, which was collected by administering tests, was statistically treated to develop for all the skills. In order to construct the norms, Percentile Scale was used. Further, the scores were classified into five grades i.e., very good, good, average, poor and very poor.

4. Results

For each of the chosen variable, the result pertaining to Descriptive Statistics (Mean & Standard Deviation) and Percentile Plot (Hi & Low) of Skills of Volleyball Players are presented in Table 1:

Table 1: Descriptive Statistics (Mean & Standard Deviation) and Percentile Plot (Hi & Low) of Volleyball skills of Junior level Volleyball Players (N=500)

S. No.	Skills	Mean ± Standard Deviation		Hi	Low
1.	Service	Mean	13.8	17	12
		SD	1.622		
2.	Setting	Mean	20.48	29	16
		S.D	1.779		
3.	Fore-Arm Pass	Mean	23.27	27	20
		S.D	2.433		

Table 1 shows that in Service, the mean score was 13.8 and standard deviation score was 1.622. In Setting, the mean score was 20.48 and standard deviation score was 1.779. In Fore-Arm Pass, the mean score was 23.27 and standard deviation score was 2.433.

	Service	Setting	Fore-Arm Pass
Mean	13.8	20.48	23.27
SD	1.622	1.779	2.433
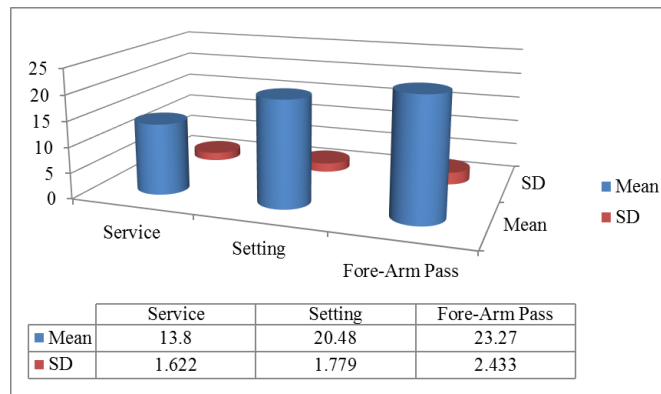
Fig 2: Descriptive Statistics (Mean & Standard Deviation) and Percentile Plot (Hi & Low) of Volleyball skills of Junior level Volleyball Players (N=500)

Table 2: Distribution of Grades under Normal Distribution for the Volleyball skills of Junior level Volleyball Players (N=500)

Test Items	Very Poor	Poor	Average	Good	Very Good
Service	Less than (<) 10.556	10.556-12.178	12.178-15.422	15.422-17.044	Greater than (>) 17.044
Setting	Less than (<) 16.922	16.922-18.701	18.701-22.259	22.259-24.038	Greater than (>) 24.038
Fore-Arm Pass	Less than (<) 18.404	18.404-20.837	20.837-25.703	25.703-28.136	Greater than (>) 28.136

1. In Service, the scores below 10.556 are considered very poor, from about 10.556-12.178 is considered poor, 12.178-15.422 is considered average, 15.422-17.044 is considered good and the scores above 17.044 are considered very good.
2. In Setting, the scores below 16.922 are considered very poor, from about 16.922-18.701 is considered poor, 18.701-22.259 is considered average, 22.259-24.038 is considered good and the scores above 24.038 are considered very good.
3. In Fore-Arm Pass, the scores below 18.404 are considered very poor, from about 18.404-20.837 is considered poor, 20.837-25.703 is considered average, 25.703-28.136 is considered good and the scores above 28.136 are considered very good.

5. Recommendations

Physical Education teachers, coaches and athletic trainers may utilize the findings of the present study by preparing or modifying the existing training schedules for Volleyball Players.

Normative data regarding Volleyball Skills will help the coaches and trainers to regulate the training programme for elite athletes.

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