The Skill Related Physical Fitness Profile As Determinants Of Nigerian Basketballers Playing At Different Levels

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ABSTRACT

This study aim to tests for basketballers' performance skills assessment and the Physical Fitness Profile also, measure power, agility, balance speed, reaction time, and coordination. The ex post facto research design was used for the study. The systematic sampling technique was used involving where every second of other subject in the population was chosen. In all, two hundred and sixteen (216) participants were used for the study out of the total population of four hundred and thirty –two (432). The instruments used for the study were the AAHPERD (2002) basketball skill tests and the physical fitness profile tests. The inferential statistics applied for the data analyses were the one way analysis of variance (ANOVA), and multiple regressions. The alpha was set at 0.05 level of significance. The findings of the study revealed that physical fitness profile was significant, depicting that the Nigerian elite basketballers are not doing well in this area. It is, therefore, concluded that physical fitness profile and performance skills is a relevant determinant of playing level in the game of basketball in Nigeria. It is, therefore, recommended that regular training and mastery of skills which promotse fitness status, high quality health, and wellness should be instituted in coaching and conditioning Nigerian basketballers.
Keywords: Health, Physical Education, Recreation, Training, coaching, Basketball,

INTRODUCTION

Performance skills in sports have been conceptualized differently by different persons. However, the generality of opinions seem to agree that sports imply the alignment of physical activities in which there is the possibility of assessing levels of skills performance (Wuest & Butcher, 2003). Franklin (2003) defined skill performance as an athlete's ability to choose and perform the right techniques at the right times, successfully and regularly and with a minimum of effort. Skill performance is therefore at the core of all sports. It should be noted that skills, techniques and motor performance are related but distinct concepts. Techniques are the basic movements of any sport or event such a dunk in a basketball match and a kick in karate. (Mackenzie, 2007).

Basketball was invented at Springfield College in 1891 in the United States of America (U.S.A) by Dr. James A. Naismith who was a physical education teacher. The game became an Olympic Sport in 1936. Since its creation, the game has become a popular sport in many countries of the world, including Nigeria (Ojeme & Uti, 2002). Basketball is a game that is played for forty minutes, stopping time of ten minutes each of four quarters.

Success in this game, according to Fahey, Insel and Roth (2003), is dependent on the skills and the physical fitness ability of the players. Okuneye and Osman (2004) and Agwubike (2005) pointed out that training and participation in a particular sport could induce adaptation, which can be physical or physiological. This is why there are always differences in the fitness levels of individuals or groups for skill performance at various sports engagements and competitions. Thus, a team or individual athlete must possess high level of adaptation for sports in order to be able to display high skill execution proficiency. According to Nabofa (2011), physical activities, exercise, and training are related but distinct concepts. He defined physical activities as the movement due to contraction of the muscles, while exercise is the movement of regimentally structured physical activities, and training as the use of exercise to achieve physical fitness and enhanced skills.

Basketball is one of such sports where amateur and elite players are easily differentiated. Through the intensive training provided for competition, various components of physical fitness such as muscular strength, muscular endurance, speed, agility, balance and co-ordination are developed. The participants are subjected to an arduous training programme, essential to excellence in competitive sports. Many basketball players willingly and voluntarily participate in these vigorous conditioning programmes to prove their worth and ability in basketball competitions, thus enhancing their play status. The basketball skills to be assessed are: shooting, passing, rebounding and dribbling.

The American Alliance for Health, Physical Education, Recreation and Dance (AAHPERD, 2002) indicated that basketball test for skills consists of tests of shooting, of throwing accuracy, and of dribbling the ball round hurdles, or cones and catching/rebounding if conducted under standardized conditions. Joyner and Macmanis (2007) however cautioned that it does not necessarily follow that a person who does well in the tests will do well in a game, but testing provide an incentive for some people and incidentally encourages practice in skills which are of use to the game.

Training of a player, according to Fox (1999), is a matter of constructing exercise programme that develops what a player will need for his specific event. This point was further stressed by Oliyide (2001) when he noted that for a training programme to be beneficial, it must develop the specific physical and physiological capability required to perform a given sport skill or activity. Gwani (1990) also stressed that the basketball coach should have an idea of who can serve what role at any position in the team. According to him, this is because for every position of play in a basketball game, there is usually a physiological demand placed on the individual commensurate with his importance in helping the team to achieve its objective, which is principally winning.

Regular training and mastery of skills promote fitness and provide additional health and wellness benefits that extend well beyond reducing risks for injury and diseases (Cobin & Welk, 2004). It is on the basis of such achievement and confidence that human beings engage in competitive activities with high level of proficiency in order to attain high performance in sports. It is through such a success that high quality health, wellness and fitness status as well as honour and glory are achieved by the players.

Statement of Problem

Basketball is a very physical sport that requires some physiological demands. (heart, lungs, muscles, e.t.c) Like other physical sports, each of its players requires very high level of physical fitness to be successful. Basketball is the second most popular sports in Nigeria (Ojeme & Uti, 2002) after football being played by two teams of five players on each side. The purpose of each team is to project the ball into the opponent's basket and to prevent the other team from securing the ball or scoring points. The ball may be passed, thrown; bounced or dribbled in any direction subject to the restrictions laid down in the rules. According to Ojeme and Uti (2002), these skills of ball shooting, ball passing, ball rebounding and ball dribbling which the Nigerian male basketball team has displayed helped to place them on the top of the basketball chart in Africa.

Basketball standard may be said to be falling in Nigeria, the reasons are not clearly defined. One may ask whether the problem is that of lack of adequate physical fitness training or skill

performance training, or both. According to Morrow, Jackson, Disch, and Mood (2005), physical fitness profile of basketball players has been assessed in those countries succeeding in basketball game to the extent that their physical fitness profile/ performance skills standard required for playing at different levels are known. Unfortunately, the fitness profile/skill performance status of the national, state, club, and tertiary institutions basketball players in Nigeria has not been assessed. The National basketball team is doing well in Africa, but beyond the shore of Africa, the story is different. The National basketball team members are selected from those who play at the club, state and tertiary institution level. There is a yardstick used to measure those who play at this level in the developed countries of the world who are succeeding in a basketball game. Other sports such as track and field athletics have standards at this similar levels all over the world including Nigeria. There are standard for determining playing level in other countries in the world, the implication is that there are norms for playing different level in the developed countries that are excelling in basketball. Though there are international standards for determining basketball skill levels, these have not been used to establish norms for different playing levels in Nigeria. Athletes/players are selected subjectively rather than objectively for the National team (Nabofa, 2011). There is a glaring gap in the literature that needs to be filled. The chances are that this could have been responsible for the dismal performance of the National team outside Africa. Nigeria cannot continue to subjectively select national team players in this world of science it should be done objectively (Nabofa, 2011). This research work was therefore, carried out to find out those performance skills that could be used as determinants of playing level among Nigeria elite basketball players. It is also necessary to determine performance skills of Nigeria elite basketballers playing at different levels. This research was therefore, carried out to answer the question "what are the performance skills that will act as determinants of playing levels among Nigeria elite basketball players and what are the physical fitness profiles of Nigeria elite basketballers?"

Hypothesis

The following hypothesis was formulated and tested at 0.05 significant level:

1.   There will be no significant difference in the skill related physical fitness profile of Nigeria elite basketballers playing at different levels.

Population of the study
The population of the study was four hundred and thirty -two (432) comprising twenty four elites male regular basketball players from each of Edo, Oyo, Abia, Katsina, Niger and Borno States as well as all the 24 male regular basketball players of Ebun Comet (Ondo State), (2011, National Sports Festival), Royal Hopper (Rivers), Delta Force (Delta State), First Bank (Lagos), Iruwa Horse (Kaduna) and Kano Pillars (Kano) (2011, National Basketball League),Twenty-four (24) each from the following tertiary institutions: University of Benin, Federal University of Technology, Minna, Nnamdi Azikiwe University Awka, University of Maiduguri, University of Lagos, Ahmadu Bello University, Zaria were also part of the population (2011, Nigeria University Games).

Sample and Sampling Techniques
The sample for this study was two hundred and sixteen (216) Nigeria elite basketball players, from the selected States, clubs, and tertiary institutions. The sample was based on all the top ranked basketball players as purposively selected from the population, which comprised State teams of Edo, Oyo, Abia, Katsina, Niger and Borno as well as the zonal champions at the 2011 national sports festival from which 12 players were selected from each. Club teams (Ebun Comet, Royal Hopper (Rivers), Delta Force (Delta State), First Bank (Lagos), Iruwa Horse (Kaduna), Kano Pillars were the first six teams at the 2011 national basketball pro-league championship from which 12 players were selected from each tertiary institutions teams (UNIBEN, FUTMINNA, UNIZIK, UNIMAID, UNILAG, ABU) were all the zonal champions at the last Nigerian University Games) which contributed 12 players each.

2.   The sample specifically included forty (40) point guards, forty (40) shooting guards, (assistant point guards), forty (40) small forwards, forty (40) power forwards, and fifty-six (56) big men or centre players. The selection of every second (2nd) player on the serialized list of the population was adopted. The adopted systematic random sampling technique is one in which each sampling unit or individual in the population had an equal chance of being selected, and that all combinations were equally probable. The adopted systematic sampling was done without replacement which is in tune with (Hassan, 1995) recommendation.

Research Instrument
The research instrument that was used in this study is an adaptation of exercise battery for collecting data on physical fitness profile of the basketballers at different levels followed an adaptation of the protocol of International Committee on the Standardization of physical fitness tests reported by Pilicz, Prezwede, Dobosz and Nwacka-Dobosz (2002). The exercise battery or field measurement test was for power, agility, reaction time, speed, coordination, and balance. The basketball courts, stop watch, cones, basketballs, were the equipment needed and used for administering the tests.

RESULT AND DISCUSSION

This chapter dealt with the analyzed data, interpretation of results and discussion of findings. These were based on information collected for the present study. It was undertaken to investigate the physical fitness profile of the elite basketball players as determinants of their playing level with a view to making recommendations and suggestions aimed at improving their skill levels for optimal performance which will transient into winning attributes.   The comprehensive raw data of the performance of all the participants, descriptive statistics results, calculated regression analysis, and analysis of variance (ANOVA) as well as Tukey Honesty Significant Difference are presented in appendices.

Table 1: Descriptive statistics of the skill related physical fitness profile of Nigerian elite basketballers playing at different levels

Variable	Club level			University level			State level		
	$\bar{x}$	S.D	Range	$\bar{x}$	S.D	Range	$\bar{x}$	SD	Range
Agility	37.08	3.40	32-44	35.17	3.34	31-40	37.92	3.83	33-46
Balance	34.75	2.30	30-38	28.42	2.81	23-34	35.42	2.19	32-38
Coordination	135.0	4.41	128-142	116.0	4.53	110-123	131.7	9.33	117-46
Power	12.50	1.62	10-15	10.17	1.70	7-13	9.33	1.50	7-13
Reaction time	35.92	5.76	27.43	46.50	6.64	33-57	37.92	4.89	32-48
Speed	43.42	1.73	40-46	46.00	2.89	41-50	43.25	1.14	41-45

The agility results recorded by the participants at the Club, University, and State levels were 37.08$\pm$ 3.40, 35.17 $\pm$ 3.54, 37.92$\pm$ 3.83, with a range of 32-44, 31-40 and 33-46 respectively. The balance results recorded by the participants at the Club, University, and State levels were 34.75$\pm$ 2.30, 28.42$\pm$ 2.81, 35. 42$\pm$ 2.19, with a range of 30-38, 23-34 and 32-38 respectively. The coordination results recorded by the participants at the Club, University, and State levels were 13.50$\pm$ 4.41, 116.0$\pm$ 4.53, 131.7$\pm$ 9.33 with a range of 128-142, 110-123 and 117-146 respectively. The power time results recorded by the participants at the Club, University, and State levels were 12.50$\pm$ 1.62, 10.17$\pm$ 1.70, 9.33$\pm$ 1.50, with a range of 10-15, 7-13 and 7-13 respectively. The reaction time results recorded by the participants at the Club, University, and State levels were 35.92$\pm$ 5.76, 46.50$\pm$ 6.64, 37.92$\pm$ 4.89, with a range of 27-43, 33-57 and 32-48 respectively. The speed result recorded by the participants at the Club, University, and State levels were 43.42$\pm$ 1.73, 46.00$\pm$ 2.89, 43.25$\pm$ 1.14, with a range of 40-46, 41-50 and 41-45 respectively.

Table 2:Tabular presentation of participants' performance on the skill related physical fitness profile of Nigeria elite basketballers playing at different levels

Level	Agility	Balance	Coordination	Power	Reaction time	Speed
Club	$\bar{x}$ = 37.08 SD =3.40 R = 32.44	$\bar{x}$ = 34.75 SD =2.30 R =30-38	$\bar{x}$ = 135.0 SD =4.41 R = 128-142	$\bar{x}$= 2.30 SD 1.62 R 10-15	$\bar{x}$= 35.92 SD 5.76 R = 27-43	$\bar{x}$= 43.42 SD =1.73 R= 40-46
University	$\bar{x}$ = 35.17 SD =3.34 R = 31-40	$\bar{x}$ = 28.42 SD =2.81 R =23-34	$\bar{x}$ = 116.0 SD = 4.53 R = 110-123	$\bar{x}$ = 10.17 SD 1.70 R 7-13	$\bar{x}$= 46.50 SD 6.64 R = 33-57	$\bar{x}$= 46.00 SD =2.89 R= 41.50
State	$\bar{x}$ = 37.92 SD =3.83 R = 33-46	$\bar{x}$ = 35.42 SD =2.19 R =32.38	$\bar{x}$ = 131.7 SD = 9.3 R = 117-146	$\bar{x}$ = 9.33 SD 1.50 R 7-13	$\bar{x}$= 37.92 SD 4.89 R = 32-48	$\bar{x}$= 43.25 SD =1.14 R= 41-45

The agility of the participants' performance recorded at the club level were 37.08$\pm$ 3.40 with a range of 32-44 respectively.

The balance of the participants' performance recorded at the club level were 34.75$\pm$ 2.30 with a range of 30-38 respectively.

The coordination of the participants' performance recorded at the club level were 135.0$\pm$ 4.41 with a range of 128-142 respectively.

The power of the participants' performance recorded at the club level were 12.30$\pm$ 1.62 with a range of 10-5 respectively.

The reaction time of the participants' performance recorded at the club level were 35.92$\pm$ 5.76 with a range of 27-43 respectively.

The speed of the participants' performance recorded at the club level were 43.42$\pm$ 1.73 with a range of 40-46 respectively.

The agility of the participants' performance recorded at the University level were 35.17$\pm$ 3.34 with a range of 31-40 respectively.

The balance of the participants' performance recorded at the University level were 28.42$\pm$ 2.81 with a range of 23-34 respectively.

The coordination of the participants' performance recorded at the University level were 116.0$\pm$ 4.53 with a range of 110-123 respectively.

The power of the participants' performance recorded at the University levels were 10.17$\pm$ 1.70 with a range of 7-13 respectively.

The reaction of the participants' performance recorded at the University levels were 46.50$\pm$ 6.64 with a range of 33-57 respectively.

The speed of the participants' performance recorded at the University levels were 46.00$\pm$ 2.89 with a range of 41-50 respectively.

The agility of the participants' performance recorded at the state levels were 39.92$\pm$ 3.83 with a range of 33-46 respectively.

The balance of the participants' performance recorded at the state level were 35.42$\pm$ 2.19 with a range of 32-38 respectively

The coordination of the participants' performance at the state level were 131.7$\pm$ 9.33 with a range of 117-146 respectively

The power of the participants' performance recorded at the state levels were 9.33$\pm$ 1.50 with a range of 7-13 respectively.

The reaction time of the participants' performance recorded at the state levels were 37.92$\pm$4.89 with a range of 32-48 respectively.

The speed of the participants' performance recorded at the state levels were 43.25$\pm$1.14 with a range of 41-45 respectively.
Tukey's Honesty Significant Difference test was used to determine the skill related physical fitness profile of the Nigerian elite basketballers playing at different levels. All the test carried out, the means differences were found to be statistically significant at 0.05 level of significance. It implies that all the pair wise results brought about the variation.

CONCLUSION/RECOMMENDATION
The Nigerian elite basketball players' performance related physical fitness profile need to be developed to aid in improving their movement proficiency and capacities in the court for enhanced ball dribbling and passing. It is therefore emphasized that physical fitness profile and the performance skills of Nigeria basketball players should be taken proper care of in training and for competitions as determinants of playing levels in the game of basketball. Regular training and mastery of skills should be instituted to promote fitness, high quality health and wellness of Nigerian basketball at State, Tertiary educational institution and Club levels and fitness status.

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