

ASSESSMENT OF POWER PROFILE OF HUMAN KINETICS AND HEALTH EDUCATION STUDENTS UNIVERSITY OF ILORIN, ILORIN, NIGERIA.

By

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Abstract

This study was carried out to assess the power level of the students of Human Kinetics and Health Education Department University of Ilorin. The research adopted experimental design in which (50) fifty students were selected (both male and female). The subjects were exposed to 30-meter sprint to determine the power level. The descriptive statistic of mean was used to analyze data. It was discovered that there were differences between the students from 100 level to 400 level. It was found that the 200 level students possess more power than the 100 level students, it was also found that the 300 level students have more power than the 400 level students lastly it was found that the 400 level Human Kinetics have more power than the 400 level health Education Students. it was recommended that specific and planned programme of fitness should be put in place in the department of Human Kinetics and Health Education University of Ilorin, Ilorin.

Key word: *Power, Strength, Speed, Endurance.*

Background to the study

Physical fitness has generally been accepted as a major aspect of any school and physical education programme since a well conducted physical education programme can significantly improve the physical fitness status of participants. Ahmed et al., (2022) affirmed that health of an individual is measured by the ability to function efficiently and have reserved energy required for emergencies . Therefore, for an individual to attain the goal of fending for himself everyday of his life, he must be physically fit. power has been described as the ability to do strength work at a very explosive pace. Amo, (2021) posited that power profile is determined by the functional capabilities of the cardiorespiratory system, the ability

of working muscles to efficiently utilize oxygen, the body's ability to produce energy through glycolysis, and psychological resistance to overcome feelings of fatigue. Strength exercises not only develop these components, but increase the athlete's ability to implement them with appropriate work. Therefore, the general issues of increasing strength endurance suggest a solution to the problem of increasing other types of endurance. Improving strength requires determination, perseverance and perseverance. Classes with a lot of weight and exercises of an explosive nature significantly depend on the ability to concentrate (Chorievich, 2022).

The power profile is a model for predicting performance of an athletics it also also takes into account aerodynamic drag and different terrain types. Four very important values serve as a model for power profile: sprint abilities (5s), anaerobic capacity described by 1-minute maximum power, 5 minutes to tell us about VO2 max capability and 20 min to describe our FTP. Those four numbers divided by weight gives the power profile of an athletes (Fletcher et al., 2021). Assessment of university of Ilorin students was considered for the purpose of this study. The word assessment comes from a root word assess which means determining the amount of something, or to determine the importance of someone or something (Kumar & Boulanger, 2021). Vela et al., (2022) defines power profile as the process of documenting, usually in measurable terms, knowledge, skill, attitude, and beliefs. However, assessing the power level of Human Kinetic and Health Education students, University of Ilorin. This is undertaken with a view of finding out the level of power of under graduate student in the department, who participate in sports and some selected activities of muscular endurance, cardio, respiratory, speed, flexibility and strength in order to discover what has more power level of the categories.

For instance, the 20 metre-shuttle run is used to measure aerobic performance as early as 1982 (Fayazmilani et al., 2022), and it is clearly stated that the aerobic capacity is probably the least important factor for a volleyball performance due to the con-current movement of the game up and down the court. For flexibility and leg explosive power (aerobic power) most

athletes seem to have similar performance, most athletes are required to go through series of flexibility training to develop adequate range of method needed to perform sports skills, (Taber et., 2022), explains that when an athletes has command over their flexibility, they are liable to perform more strongly, quickly and efficiently.

Izquierdo et., (2021) affirmed that inactivity causes the joints to become stiffer with age, therefore there is a need for continuous exposure to physical activity to maintain flexibility for better fitness status and gender role performance. It has been argued that insufficient physical activity is closely related to coronary heart diseases, obesity, hypertension, emotional disorder and others. In fact most common news in our media today is the reporting of premature death following either a brief hypertension, coronary heart disease, creeping obesity and many more. It has been duly stated that human body grows with use and decays for lack of use.

According to Frunk and Wagnalls (2006), total fitness can be defined as how well the body performs in each of the components of physical fitness as a whole i.e cardio vascular endurance, muscular strength, muscular endurance, flexibility and body composition. Lohan (2021) submitted that the body is built for activity. It is like a machine or an engine which will spoil when not used actively leads to deterioration. Participation in regular exercise keeps the various part of the body fit and make them work in harmony with one another. Exercise involves the skeleton, muscular, respiratory and circulatory systems. They promote suppleness and stamina and they help to maintain an ideal body weight. In addition, physical exercise help combat disease of the lungs, the heart and circulation (Lohan et.al. 2021).

Fitness is in three main tiers or stages and each one proceeds to the other. The first tier is static or medical fitness. This is the lowest level of fitness and it is the level required by all individuals for daily survival. The second tier is dynamic fitness. This is concerned with the state or level of functioning of the body organs and systems during work. The third and highest level of fitness is motor fitness. Anninno et al., (2021) noted that it is the capacity to perform specific motor skills i.e fitness can never be acquired. Strength is the ability to exert a force against resistance or the extent of man individuals' power of force exponentially. All other things being equal, the stronger you are, the more power and force your muscles can produce, the less likely they are to fatigue, the faster you can accelerate and move, and the greater your resistance to injury.

Regular aerobic exercise, such as running or using a stationary bike, makes your muscles use oxygen more efficiently and strengthens the heart and lungs. Strength training with weights, you are using your muscles to work against the extra pounds. This concept is called resistance training. This strengthens and increases the amount of muscle mass in the body by making the muscles work harder than they are used to. Strength training uses resistance methods like free weight machines, resistance or a person's own weight to build muscles and strength. Olympic lifting or power lifting, which people often think of when they think of weight lifting, concentrates on how much weight a person can lift at one time. Competitive body building involves evaluating muscles definition and symmetry, as well as size.

Speed refers to the quickness of movement of a limb whether this is the legs of a runner or the arm of the shot putter. Speed is an integral part of every sport and can be

expressed as any one of, or combination of the following maximum speed, elastic strength (power) and speed endurance. Energy for absolute speed is supplied by the anaerobic alactic pathway. The anaerobic without oxygen alactic without lactate. Energy system is best challenged as an athlete approaches top speed between 30 to 60 meters while running at 95% to 100% of maximum. This speed component of aerobic metabolism lasts for approximately eight seconds and should be trained when no muscle fatigue is present usually after 24 to 36 hours of rest.

Flexibility and a correct warm up will affect stride length and frequency. Stride length can be improved by developing muscular strength, power, strength endurance and running technique. The development of speed is highly specific and to achieve it one should ensure that:

1. Flexibility is developed and maintained all year round
2. Strength and speed are developed in parallel
3. Skill development is pre-learned, rehearsed and perfected before it is done at high speed levels.
4. Speed training is performed by using high velocity for brief intervals. This will ultimately bring into play the correct neuro muscular path ways and energy sources used.

Statement of the Problem

Looking at the subsequent performances of the university of Ilorin in various sports such as WAUG,NUGA, the university has been performing wonderfully both at local and national levels and the department of sports has been having higher number of athletes in the school teams. The department has always been getting medals for the university and this one of the reasons to take up this finding. This study is an evaluation of the power level of

Human Kinetics and Health Education students of University of Ilorin.

Objectives of the study

The study was undertaken to assess the power level of Human Kinetic and Health Education students, University of Ilorin. This is undertaken with a view of finding

Hypothesis

Following hypothesis were tested by the researcher.

H₀₁: there is no significant difference between the power level of 400 level Human Kinetics Students and 400 level Health Education Students in University of Ilorin

H₀₂: there is no significant difference between the power level of 100 level students and 200 level student of Human Kinetic and Health Education Department University of Ilorin

H₀₃: There is no significant difference in the power level of the 300 level to 400 level students of Department of Human Kinetics and Health Education University of Ilorin

Methodology

The population was all Human Kinetics and Health Education Students in 100 level, 200, 300 and 400 level in Human Kinetics and Health Education Department University of Ilorin, Ilorin. Stratified random sampling technique was used to select (50) fifty participants across the level (100 – 400 level) to determine their power profile. In conducting the test for this study, a variety of equipment and facilities were used, among which are a measured 30 meter field, twelve (12) cones, a stop watch.

The test was designed to evaluate the power profile of Human Kinetics and Health Education undergraduates, University of Ilorin, Ilorin.

out the level of power of under graduate student in the department, who participate in sports and some selected activities of muscular endurance, cardio, respiratory, speed, flexibility and strength in order to discover what has more power level of the categories.

1. Power test: 30 meter sprint.

Aim: To assess the degree of power and to measure muscle.

Equipment: 30 meter field, twelve (12) cones, a stop watch

Procedure:

- a. He/she sprints from point A to B between the cones deviating five (5) meters side ways in the middle of the sprint.
- b. He/she jogs slowly for 10 meters after point B and then back to the start, taking 30 seconds to do so.
- c. As soon as he/she reaches the start, he or she will repeat the sprint.
- d. He/she completes a total of ten (10) sprint.

Scoring: Subtract your fastest time from your slowest time, that is your sprint fatigue. For example if your slowest sprint was 7.8 second and your fastest sprint was 6.9 seconds, your sprint fatigue is 0.9 you can find the average speed of the first three times or trial and divide it by the average speed to the last three trials. e.g 7.1 seconds, 6.9 seconds, 6.9 seconds, 7.0 seconds, 7.2 seconds, 7.1 seconds 7.3 seconds, 7.4 seconds, 7.5 seconds. In the average of the first three times is 6.97 seconds and the average of the last three times is 7.40 seconds $6.97 - 7.40 = 0.94 \times 100 = 94\%$ 94 is the power level.

Data Analysis

The analysis of the data collected were based on direct test score of the 50 participants on the power level of Human

Kinetics and Health Education students, University of Ilorin, Ilorin. The data were analyzed with the use of descriptive statistics of the mean which was used to determine the test scores and were related to those established norms.

Measurement Taken

The following variable were tested by the researcher, they are: age and a 30 meter sprint.

Data Conversion

All the raw data collected were converted into standardized scores and were statically analyzed. The age of the subjects were recorded in years, the power was calculated using the 30m sprint.

Presentation of Data

H₀₁: there is no significant difference between the power level of 400 level Human Kinetics Students and 400 level Health Education Students in University of Ilorin

Hypothesis 1: 400 level Human Kinetic and 400 level Health Education Students.

Variables	Age Range (Years)	Group	F	CPL	TPL	TF	Mean
400 Human Kinetics	22 – 23	A ₁	8	204			
	24 – 25	A ₂	2	54	258	10	25.8 J/sec
400 Health Education	20 – 23	B ₁	6	142			
	24 – 27	B ₂	4	93	235	10	23.5 J/sec

F = Frequency

CPL = Calculated Power Level

TPL = Total Power Level

TF = Total Frequency

Table one presents the means of Human Kinetic (x_1) and Health Education (x_2) which are 25.8 J/sec and 23.5 J/sec respectively. It shows that there is a

significant difference in the power level of the participants in Department of Human Kinetics and Health Education, University of Ilorin.

H₀₂: there is no significant difference between the power level of 100 level students and 200 level student of Human Kinetic and Health Education Department University of Ilorin

Table 2: Hypothesis 2:100 Level Student and 200 Level Students

Variables	Age Range (Years)	Group	F	CPL	TPL	TF	Mean
100 level student	16 – 17	A ₁	6	171			
	18 – 24	A ₂	4	98	269	10	26.9 J/sec
200 level student	20 – 23	B ₁	6	186			
	24 – 28	B ₂	4	102	288	10	28.8 J/sec

table two the mean score of 100 level students (x_1) and 200-level students (x_2) which are 26.9 J/sec and 23.8 J/sec respectively. It show that there is a significances on the power level of the 100 level student to the 200 level student of the

Department of Human Kinetic and Health Education Student of University of Ilorin.

H₀₃: There is no significant difference in the power level of the 300 level to 400 level students of Department of Human Kinetics and Health Education University of Ilorin

Hypothesis 3: 300 Level Student and 400 Level Students

Variables	Age Range (Years)	Group	F	CPL	TPL	TF	Mean
300 level student	19 – 22	A ₁	5	186			
	23 – 24	A ₂	5	204	388	10	38.8 J/sec
400 level student	20 – 23	B ₁	14	346			
	24 – 27	B ₂	6	147	493	20	24.7 J/sec

table three reveals the mean score of 300 level student (x_1) and 400 level student (x_2) which are 38.8 J/sec and 24.7 J/sec respectively. It shows that there is a significant difference on the power level of the 300 level students to the 400 level students of the Department of Human Kinetic and Health Education Student of University Ilorin.

Discussion of Findings

From hypothesis one, the mean variable for both the 400 level Human Kinetic Student and 400 level Health Education Students. As shown from the findings, the 400 level students of Human Kinetic has more power level than the 400 Health Education Students. This may be due to lack of physical activities by the 400 level Health Education Students. This contradict the previous study of Izquierdo et., (2021) who affirmed that inactivity causes the joints to become stiffer with age, therefore there is a need for continuous exposure to physical activity to maintain flexibility for better fitness status and gender role performance.

Findings further showed, the mean variable for the 100 level students and 200 level students, it revealed that the 200 level students have more power level than the 100 level student, this may be caused by lack of physical exercise by the 100 level students because they are new intake. The findings of this study agreed with the previous findings of Frunk and Wagnalls (2006) whose study affirmed that total fitness of an individual is a function of how well the body performs in each of the components of physical fitness as a whole

i.e cardio vascular endurance, muscular strength, muscular endurance, flexibility and body composition.

Furthermore, the mean variable for 300 level students and 400 level student revealed that the 400 level student do not fully participate in sport like the 300 level student.

Though, there was no significant differences found in the power level of all groups students. The findings concur with the previous study of Vela et al., (2022) who study affirmed that athletes power level differ in sports and some selected activities of muscular endurance, cardio, respiratory, speed, flexibility and strength. The mean of all group fell below 40 which means that students still need to improve in participating in physical activities. it is observed that the participants have room for improvement to develop more power.

Conclusion

Based on the findings of this study the study concluded that students still need to improve in participating in physical activities. it is observed that the participants have room for improvement to develop more power. Since their mean power level still falls below average.

Recommendation

Based on the findings of this study following recommendations are made;

1. Health Education students should be encouraged to participate in physical activities so as to improve their fitness and health status.
2. Fresh Human Kinetics Students should be encouraged to participate in

physical activities to improve and develop their body structure and powers.

3. The school administration should provide varieties of sport facilities and

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