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EDITORIAL COMMENT

Journal of Education and Environment is an academic journal which aims to be educational, providing communications on a wide range of environmental and educational issues in a multidisciplinary and global context. It aims to be of interest to a wide readership. Articles to be considered for publication will range from the basic environmental education to issues and information concerning education and environment. Opinions and ideas based on scientific observations are welcome. While the expression of opinions may lead to debate and disagreements, such reactions are healthy and can lead to new discoveries. All articles submitted for publication are subject to peer review and the criteria are environmental education significance and quality. The editorial board will continue to appreciate readers' criticism and suggestions.

Rosemary D. Ebong, Ph.D.
Associate Professor/Editor-in-Chief.

DEVELOPING A NORM FOR SCREENING ATHLETES DURING COMPETITIONS: NIGERIAN SECONDARY SCHOOLS SPORTS FEDERATION EXPERIENCE

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ABSTRACT

In an attempt to find solution to cheating which characterizes age – declaration at many age – group competitions, various methods including chronological age and physiological age (Skeletal age) have been adopted to ascertain what is called “truly” “under – 18” for secondary school sports competition. But rather than solving the problem, these methods seem to have created more problems. This study then ventured into another method which pull together the use of the above two stated methods into one. The method called exponent system was tested and eventually adopted successfully during the 1998, All Nigeria Secondary School Sports Federation Competition held in Abuja.

INTRODUCTION

Screening of eligible athletes during sporting competition has been a matter of concern to athletes and coaches and indeed to the various sport organising bodies. The use of mercenaries or over age athletes is a problem during various competitions especially secondary school or age group competitions.

However, it is important that the physiological make up of the athletes in a contest should be comparable in age, ability and capability so that their strength and power would be of the same level in order to prevent injury and for such contest to be meaningful, interesting, free and fair. Such competitions include – All Nigeria Secondary School Sports (NSSF, U-18); Shell Cup Secondary School Soccer Championship (Shell Cup, U-18); Nigeria Football Association/Coca-Cola Academicals (U-18); NFA/Manuwa Adebajo Cup U-18 for students in secondary schools. Others include Federation International Youth Sports (FIYOS, U-18); Pepsi Football Academy Competition U-18. For the above stated competitions there is yet to be an acceptable means of screening the athletes/players to be sure they are within the expected age required.

In an attempt to find solution to age cheating which characterizes the above stated competitions which requires age declaration, various methods including chronological age, physiological age (skeletal age) and identification card/photo album endorsed by school head, have been adopted to ascertain what is called “truly” under 15, 16 and 18 for various youth competitions. Rather than solving the problem, those methods seem to have created more problems.

Emiola (1987) listed some of the problems associated with those screening methods

previously adopted to include deciding which method of classification to adopt and how to define precisely and objectively the qualification for each category of competition. These problems include where to put the cut-off between one category and the next? How to decide who is matured enough or who is over qualified for a certain level of competition? Having chosen the qualifying factor for a level of competition, how to ascertain that all competitors are within the maturation level that have been chosen is another problem. There is thus a need to find a way out of all the above stated problems through the introduction of another method.

This (independent) study (on exercise physiology) then ventured into another method. The system of classification recommended took its basis from Nelson and Cozen classification index. This system involved the use of age, height and weight being related to numbers in an exponents as shown in Table 1. This method combines the use of both chronological age and physiological age, which have been adopted separately before.

POPULATION OF THE STUDY

The population of this study was all male and female athletes that took part in the 1998 edition of All Nigeria secondary School Sports Competition. Twenty states including FCT took part in the competition.

SUBJECTS OF THE STUDY

A purposive random sampling technique was used to select those athletes that qualified during the screening and later took part in the four scoring sports. The subjects were 785 secondary school athletes from twenty states. The subjects took part in four scoring events during 1998 Edition of All Nigeria Secondary School Competition held in Abuja between 22 – 27 November, 1998. Included were sprinters, middle distance and endurance athletes, Table Tennis and Football players. All subjects were expected to be students of secondary schools in Nigeria and should be under eighteen years of age. The breakdown of the athletes by their game and sex was:-

Track and Field	: Male 248, Female 170
Table Tennis	: Male 78, Female 49
Tennis	: Male 25, Female 24
Football	: Male (only) 191

Measurement Locations:- National Youth Service Corp (NYSC) Orientation Camp, Kubwa and Aguiyi Ironsi Cantonment both in Federal Capital Territory (FCT) Abuja.

Order of Measurement:-

- Weight
- Height
- Age

Measurement Procedures:-

Weight:- The subject's weight was measured using the scale of the Health-O-meter when dressed in short sport pant, standing bare-footed on the scale facing it; while the tester took the weight measurement and was recorded to the nearest tenth of a kilogram. The instrument Model 8002 was manufactured by Continental Scale Corporation Illinois, U.S.A.

Height:- The height of the athletes was measured by the use of the stadiometer part of the Health-O-meter Scale when backing it and recorded to the nearest centimetre.

Age:- The age of the athlete was recorded in years and months. The birth certificate, birth declaration of age or date of birth on the students school identification card endorsed by the school principal, were accepted.

The above three variables were converted to exponent points using Nelson and Cozen classification chart (Table 1) for example in the case of Osagie Idah whose statistics are shown below, this exponent was determined as follows:-

Weight:	54.78kg	=	exponent 13
Height:	1.54 meter	=	exponent 11
Age:	17 years 6 months	=	exponent 16
	Total		<u>40</u>

Pilot Study: A pilot study was conducted to assume the total exponent cut-off point. Two hundred students (100 male and 100 female) athletes of Osun State Secondary Schools were used. The exponent mean value of the pilot study was 40.75 for male and 41 for female; mode for male was bi-modal 37 and 40; while that of female was 42. Range was 33 and 49 for male while 34 and 48 for female; the median was 41 for both sexes.

Table: 1 Nelson and Cozen classification chart for boys and girls

Exponent	Height in Meters	Age in Years and Months	Weight in Kilogrammes
1.	1.270 to 1.319	10 to 10-5	27.24 to 29.51
2.	1.320 to 1.345	10-6 to 10-11	29.56 to 31.78
3.	1.336 to 1.369	11to 11-5	31.80 to 34.05
4.	1.370 to 1.395	11-6 to 11-11	34.10 to 36.32
5.	1.400 to 1.419	12 to 12-12-5	36.36 to 38.59
6.	1.420 to 1.445	12.6 to 12-11	38.60 to 40.86
7.	1.446 to 1.469	13 to 13-5	40.90 to 43.13
8.	1.470 to 1.495	13.6 to 13-11	43.16 to 45.40
9.	1.500 to 1.515	14 to 14-5	45.46 to 47.67
10.	1.520 to 1.545	14.6 to 14-11	47.70 to 49.94
11.	1.546 to 1.669	15 to 15-11	50.00 to 52.21
12.	1.670 to 1.695	15-6 to 15-11	52.26 to 54.48
13.	1.700 to 1.719	16 to 16-5	54.50 to 56.75
14.	1.720 to 1.745	16-6 to 16-11	56.80 to 59.82
15.	1.750 to 1.800	17 to 17-5	59.10 to 60.30
16.	1.806 to 1.820	17-6 to 17-11	60.39 to 61.74
17.	1.826 and above	18 and over	62.00 and over

Table 2: Physical Characteristics of Subjects

Variable	Tracks and Field		Football	Table Tennis		Tennis	
	M	F	M	M	F	M	F
Weight Mean (kg)	54.75	51.34	55.61	48.84	49.34	55.30	51.73
SD	3.143	1.805	.505	3.728	2.413	.957	2.458
Range	49-66	47.3-57.9	50.1-63.2	39.65	42.3-517	49.7-59.3	47.3-54.3
Height Mean (Meter)	1.693	1.663	1.687	1.609	1.632	1.683	1.627
SD	1.924	3.528	1.836	.465	3.035	1.889	3.681
Range	1.66-1.72	1.40-1.70	1.47-1.70	1.51-1.68	1.43-1.65	1.53-1.68	1.43-1.61
Age Mean (yr months)	17.6	17.5	17.9	17.3	17.6	17.7	17.4
SD	1.986	1.03	2.035	1.141	1.371	1.341	1.542
Range	15.2-17.3	14.3-17.8	15.1-17.9	13.3-17.4	14.5-17.9	14.4-17.3	15.3-17.4

n = 785

Table 3: Exponent interpretation of physical characteristics of subjects

Variable	Track & Field		Football	Table Tennis		Tennis	
	M	F	M	M	F	M	F
Weight Mean	13.103	11.912	13.529	10.375	10.560	13.103	11.912
SD	3.035	3.681	2.458	3.728	2.534	3.035	3.681
Range	49-66	47.3-57.9	50.1-63.2	39.65	42.3-51.7	10-15	9-12
Height Mean	12.590	11.912	12.775	11.208	11.400	12.590	11.744
SD	3.035	3.681	1.924	2.413	.957	1.889	1.761
Range	10.003-17.608	9-14	8-13	9-12	6-11	11-12	6-11
Age Mean	16	15	16	16	16	16	15
SD	.706	1.035	.368	.447	1.811	.792	.893
Range	11-15	9-16	11-16	7-15	9-16	9-15	11-16

n = 785

Table 4: Summary of exponent statistics

Variable	Track and Field		Football	Table Tennis		Tennis	
	M	F		M	F	M	F
Weight	13	11	13	10	10	13	11
Height	12	11	12	11	11	12	11
Age	16	15	16	16	16	16	15
Total	41	37	41	37	37	41	37

Results

The Tables 1-4 show the result of the 785 subjects. The means, standard deviations and range of subjects physical characteristics are presented in Table 2. Table 3 presents the exponent interpretation of the physical characteristics. Table 4 shows the summary of exponent statistics.

Comparisons made between the athletes by sport revealed the following findings:-

Weight: The male football players had more weight than others, followed closely by tennis players, while the heaviest athletes were among the Track and Field, with Table Tennis players scoring the least. The result is not surprising since the trend shows the relationship between weight and those sports involved.

Height: The mean height of the Track and Field athletes is the highest followed by Football players, Tennis came next followed by Table Tennis. This result is as it should be as height is an added advantage to Track and Field and Football than the other two sports.

Age: The mean age of the athletes shows that Football players are older followed by Tennis next are Track and Field while Table Tennis players are the youngest. The trend of the above results show that there is relationship between age and weight, also age and height.

DISCUSSION

The data of the subjects of this study are comparable to those reported by Igbanugo and Fatokan (1995) for 100 non-athletic boys of age 16 in secondary schools in Ibadan. They had a mean weight of $53.2\text{kg} + 6.9$ and mean height of 1.65 meter. Likewise the values of this study can also be compared with mean value of 58.5kg , $52.4 + 3.1$ and $50.4 + 3.8$ for the weights; $1.65 + 6.3\text{m}$, $1.60 + 5.8$ and $1.58 + 7.9$ for heights of $16.2 + 3.1$ yrs, $15.4 + 2.6$ and $14.8 + 2.1$ for ages of 79 male soccer defenders, mid-fielders and forward players of five secondary schools in Ile-Ife and Ilesa studied by Igbokwe and Toriola (1990).

The result of this study is higher than those reported by Adeniran and Toriola (1988) for 55 non-athletic Ile-Ife boys of similar age group (12 and 17 years). The Ile-Ife boys had a mean height of 1.54 meter and 40.2kg for weight. The subjects of this study is also taller and heavier than those reported by Musa (1994) for 112 adolescent boys in Kano City. The differences in the height and weight of the subjects of this study with that of the last two studies stated above may be due to the fact that the subjects of this study being athletes might have developed more physical structures during the training for the national competition than their non athlete counterpart compared with.

The differences can also be confirmed when compared with the mean values of $68.6 + 2.9$, $70.1 + 3.2$, $67.6 + 2.7$ and $67.6 - 2.6$ for weight; $1.77 + 0.1\text{m}$, $1.77 + 10.0$, $1.75 + 5.8$ and $1.75 + 5.8$ for height; $17.3 + 0.5$ years, $17.5 + 0.9$, $16.1 + 1.22$ for the ages of goal keeper, defenders, mid fielders and forward players respectively as reported by Amusa and Igbanugo (1990) on 25 member of the Nigerian Junior National Soccer Team for 1989 Junior World Cup in Riyadh.

The differences in the last study can also be accounted for by the differences in training programmes between the state athletes of this study as their values fall below that of the international players.

The implication of this study can be looked from the similarity showed with results of other local athletes which confirmed two things. Firstly the result of this study can be useful in establishing norms for same age group competitions. Secondly, though the

subjects used for Nelson and Cozen norm chart were non-Nigerian yet their physical characteristics are comparable to Nigerians. The chart can also serve as base of study to prepare local norms aimed at eliminating non bonafide students in secondary school games and to prevent the use of mercenary or over aged athletes/players in other similar youth championships.

The study also revealed that exponent 40 is ideal for age 16 competitions, while 41 and 42 can be used for ages 17 and 18 competitions respectively. The study also shows that training can improve athletes physical characteristics.

CONCLUSION

With the tremendous development in sports especially youth sport in the present day Nigeria, it is imperative to apply scientific knowledge in screening our athletes for age grade competitions. The Nigerian ban for two years from FIFA Organised age limit soccer competitions due to glaring inconsistency in the ages filled by certain players for different competitions is on record and should not repeat itself.

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