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Effect of Eight Weeks 6km Run Work/Training Programme on the Physical Fitness Levels of Children

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Abstract
This study was carried out to determine the effects of eight weeks training programme of Eurofit motor test on Children in Nigeria. Two hundred subjects (200) comprising 100 males and 100 females in Mainland Local Government Area of Lagos State were involved in the study ranged from 12 – 15 years. The duration and frequency of the training programme was eight weeks and two hours per session. The test consisted of Eurofit motor performance test (6 minutes run test, standing broad jump, sit-up in 30 seconds, 50 meters dash run, sit and reach and standing on the foot). 6km run/work was adopted for the training programme on the level of physical fitness status in children. Descriptive statistics of means, standard deviation and t-test were used for data analysis and the critical value for determining significance was put at 0.05. The result of the study shows that there were no significant difference in most of the Eurofit Motor performance test between boys and girls after eight weeks, 6km run work. Generally there were little disparity in performance level between the boys and girls. However significant occur among the subject samples on their level of fitness after the 8 weeks training programme.
Keywords: Eurofit Motor Test, Fitness Level, Training Programme, Performance Level, 6km Run/walk.

INTRODUCTION

In the year 2001, there was a surge of interest in physical fitness in Lagos, Nigeria, people are suddenly beginning to shake off stress and get themselves' fit.

For most people who left school or college and go into sedentary jobs, the end of full-time education also means the end of any sport or physical training, because of the nature of their jobs. According to Ogunleye, (1995) the need to be physically fit has gained acceptance in many countries of the world. Because it is realized that physical fitness is of fundamental importance to the individual's well being. It is also the basis of all rooms to excellence in the performance of daily works routine. Therefore effort must be made to build up, maintain and improve the physical fitness of both males and females, youths and children as well. Some studies have investigated fitness status in youths and adults and particularly athletes (Igbokwe, 1984 and Ogunleye, 2000) is usually assumed that it is not normal for children to be physically fit, if they are not, it might be that they are experiencing some health problems. (Ajiduah, 1998) enumerated the benefits derivable from regular physical exercises as decreased heart rate and blood pressure at rest and during work, cardiac and skeletal muscle hypertrophy, increased stroke volume, improved pulmonary function, decreased body fat, improved flexibility and improved muscular endurance. He commented further that physical activities in youth should be optimised, so that when the youths grow older physical activities will be an integral part of their life and may contribute to healthy ways of living.

Fitness according to Duhu (1978) is the capacity to carry out reasonably vigorous and activities that include such qualities important to an individual's health and well-being in general as opposed to those that relate to performance of specific motor skills. He further explained that physical fitness is the opposite of being fatigue from ordinary efforts. This involve the ability to last, withstand pressure and to sustain such under difficult conditions where an unfit individual would give up.

Etten, (1993) said fitness, like sport is a social phenomenon. Throughout history, nations have been showing much interest in the fitness of their citizens.

Ajiduah (1998) claims that corresponding efforts have not been made to consciously take care of the physical fitness of children. (Adeniran and Adeniji (1998; Agbonjimi, 1994 and Ajuduah, 1998, Ogunleye, 1995 have all expressed that the state of youth fitness could be called a national tragedy because symptoms of cardiovascular diseases are evident in children. Nevertheless, it may not be exaggeration to say that the improvement of the fitness of children and youth is one of the biggest challenges to any government, academic institution and other health agencies.

Some efforts are being made to maximise the opportunities within the regular school physical education

classes and the intramural and extra mural programmes to take care of physical fitness of children who to go school.

Sharkey, (1910) and Ajiduah, (1998) claim that ordinary effort may not be enough. Concerted effort must therefore be developed to conscientiously execute effective programmes of physical activities beyond the regular school physical activity programme. The purpose of this study therefore was to investigate the effect of eight weeks 6km run walk training programme of physical fitness within the ages of 12 – 15 years.

The specified factors of Eurofit motor test investigated were endurance, power, muscular endurance, flexibility, speed and balance. Also height, weight was considered.

To date, the Eurofit motor test is one of the newly recognized field test batteries for assessing fitness in children. This test is less expensive and requires simple equipment which could be constructed locally.

The Eurofit motor test has generally been used to evaluate the fitness characteristic of children in other countries. But its reliability in assessing the fitness status of Nigerian children is yet to be determined which this study intend to establish.

It is therefore hypothesized that there will be no significant difference in children state of fitness and after the Eurofit Motor test.

Subject

The subject for the study were randomly assigned to two groups of 100 each making a total population of 200 subjects. The subjects were apparently assumed healthy males and females, aged between twelve and fifteen (12 – 15) with a mean age of 13.5 years. The subject were students of secondary schools in Mainland Local Government Area of Lagos State, Nigeria. They were briefed about the practical involvement of the exercise. Each group was trained for a period of eight weeks' three days per week.

Procedure

The subject in each group of one hundred boys (100) and girls were made to train for eight (8) weeks, three times a week using interval training of work and relief in the ratio 1:1 which involved 2 x 6km jogging and 2 x 6km walking. In order to determine the fitness levels of the subject as Eurofit motor fitness test battery was administered on the subject before and after the eight week training programme. The subject blood pressure and heart rates were monitored during the training and Eurofit motor test was administered first before the training and after the training programme. All measurements were taken before 9.00a.m. and 12 noon on measurements days.

1. 6 min. run (laps): This was used to measure endurance. The subjects were asked to run 400m as many laps as the participants can cover within 6 min time duration. The period of time covered was recorded based on the laps run.
2. Standing Broad Jumps (cm): This was used to measure power and strength. The subjects were asked to stay in a particular position, where they were instructed to lift themselves forward to cover a distance. The distance was measured with a measuring tape which was recorded in centimeters (cm).
3. Sit up in 30 seconds: The Subjects were asked to perform abdominal cure exercise for 30 seconds. The number of times that can perform the exercise was counted for the training programme. The test is to measure Abdominal Endurance.
4. 50m Dash: The time the subjects used in covering the distance of 50m was recorded. The aim of the test was to determine how fast the subject can cover 50m in sprint this test was used to measure speed.
5. Sit and Reach: This is trunk flexibility test in which the stretching ability of the hamstring and lower back muscle are tested using a bench turns on its side. The subject sits on the floor with the two legs together stretched forward so that the soles of the feet are placed against the flat side of the bench, he stretched forward as far as possible so that his arms are fully extended. With the aid of a meter ruler fixed to the bench the subject can measure the distance the finger tips reach in centimetres.
6. Standing on 1 foot: The subject placed the right foot on the subordinate leg against the knee of the dominant leg and upon command by the researcher, raises the heel of the dominant foot from the floor, he attempts to maintain a static balance as long as possible without the heel touching the floor. The subjects hand must be placed on the hips during the test and the best time of three attempts is recorded for him in seconds. Standing on 1 foot is for testing static balance.

Pre and Post Training Design

Figure 1

	Pre-Test	**Training Programme**	**Post Test**
Boys N = 100	Eurofit Test Battery Administered	8 weeks 2 x 6km run walk Exercise Training Programme	Eurofit test battery Administered
Girls N = 100	Eurofit Test Battery Administered	8 weeks 2 x 6km run walk Exercise Training Programme	Eurofit test battery Administered

The instruments used for the data collection for this study were standardized instruments.

RESULTS

Table 1: Means score of the Physical characteristics of the subject

Variable	**Mean Boys**	**SD**	**Mean Girls**	**SD**
Weight	45.46	3.64	13.34	6.5
Weight	4.24	2.06	4.30	2.09

Table 2: Means and standard deviation of Eurofit Motor Performance Test of Children before training programme

	Boys		**Girls**	
	Mean	**SD**	**Mean**	**SD**
6 min. run (LAPS)	7.99	2.82	8.36	2.89
Standing Broad Jump (M)	1.75	1.32	2.07	1.43
Sit up in 30 sec. (No)	9.7	3.11	10.72	3.72
50m dash (Sec)	9.45	3.07	11.02	3.31
Sit and Reach (CM)	71.2	8.43	71.01	8.48
Standing on 1 foot (SEC)	58.4	7.64	58.18	7.62

From the scores in table 2, on the test of motor performance of children, the mean and standard deviation are shown as follows; for 6 min run test 7.99 and 2.82 was recorded as mean and standard deviation for boys while the mean was 8.36 with standard deviation of 1.32 for boys while girls was 2.07 with standard deviation of 1.43. For sit up in 30 seconds test the mean was 9.7 with standard deviation of 3.11 for boys and girls mean was 10.72 with standard deviation of 3.72. For 50m dash boys scored 9.45 an SD 3.07 while females had 11.02 and an SD of 3.31. On the sit and reach test boys scored a mean of 71.2 with an SD of 8.45 while girls scored a mean of 71.01 with an SD of 8.48. On the standing on 1 foot test boys scored 58.4 with an SD of 7.64 while girls scored a mean of 58.18 with an SD of 7.62.

Table 3: Mean and standard deviation of Eurofit Motor Performance test scores after training programme

	Boys		**Girls**	
	Mean	**SD**	**Mean**	**SD**
6 min. run (LAPS)	6.96	2.63	7.27	2.69
Standing Broad Jump (M)	1.99	1.41	2.69	1.30
Sit up in 30 sec. (No)	14.5	3.76	16.1	4.10
50m dash (Sec)	8.77	2.96	8.99	2.99
Sit and Reach (CM)	74.9	8.65	74.41	8.62
Standing on 1 foot (SEC)	60	7.74	60	7.74

Table 3 shows that 6 min run test the boys mean was 6.96 a standard deviation was 2.63 while for girls the mean was 7.27 with a standard deviation of 2.69. For standing broad jump for boys the mean was 1.99 with a standard deviation of 1.41 while the girls mean was 2.69 with standard deviation of 1.30 while the sit up in 30 seconds for boys the mean with 14.15 with a standard deviation of 3.76. The mean for the girls was 16.1 while their standard deviation was 4.10. In the 50m dash for boys the mean was 8.77 with a standard deviation of 2.69 while for girls a mean of 8.99 with SD 2.99. On the sit and reach test for boys the mean was 74.9 with a standard of 8.65 while the girls mean score was 74.41 with a standard deviation of 8.62. For standing on one foot test in boys the mean was 60 and standard deviation was 7.74 while for girls the mean 60 and standard deviation was also 7.74.

Table 4: T-test score for Motor Performance for Pre and Post Training Test for boys

Variables	X	X diff	T-(A-C)
6 min. run (LAPS)	Pre 7.99 Post 6.96	1.03	14.51*
Standing Broad Jump (M)	Pre 1.75 Post 1.99	0.24	15.58*
Sit up in 30 sec. (No)	Pre 9.7 Post 14.15	4.45	.53
50m dash (Sec)	Pre 9.46 Post 8.77	0.69	26.42*
Sit and Reach (CM)	Pre 71.2 Post 74.9	3.7	3.74*
Standing on 1 foot (SEC)	Pre 58.4 Post 60	5.6	.74

* Significant at $P < 0.05$
t-critical 1.96

From the table above, the t-test analysis on pre and post performance of Eurofit Motor Test indicate that there was significant difference on all the tests except in sit up in 30 seconds and the standing on one foot where there was no significant difference between the pre test and post test score.

On the 6 mins run a t-test value of 14.51 was obtained. On the standing broad jump 15.58. 50m dash 26.42 and sit and reach 3.74 which were all significant. While sit up in 30 seconds had value .53 and standing on one foot .74 which were not significant.

Table 5: T-test score for Motor Performance for pre and post Training Test for Girls

Variables	X	X diff	T-(A-C)
6 min. run (LAPS)	Pre 8.36 Post 7.27	1.09	14.33*
Standing Broad Jump (M)	Pre 2.07 Post 1.69	0.38	1.89
Sit up in 30 sec. (No)	Pre 10.72 Post 16.1	6.28	4.44*
50m dash (Sec)	Pre 11.02 Post 8.99	2.03	.85
Sit and Reach (CM)	Pre 72.01 Post 74.9	2.89	16.26*
Standing on 1 foot (SEC)	Pre 58.18 Post 60	1.82	.934

* Significant at $P < 0.05$
t-critical 1.96

As shown in table 5, the result of the t-test analysis on Motor Performance for pre and post training test for girls showed significant difference on three tests.

The test are 6 minutes run test with a t-test value 14.33. On the sit up in 30 seconds t-test value 4.44 and t-test value of 16.26 on the sit and reach test. There was no significant difference on three tests which are the standing broad jump with a t-test value of 1.89. On 50m dash the t-test value of .85 and on the standing on one foot test the t-test value is .934.

Discussion

From the results of the study, it was evident that there was a difference in the response of Nigerian children to Eurofit Motor Test following a training programme, the mean and standard deviation of Eurofit Motor performance test was taken before the training programme which was presented in table 4. A body characteristic of the students was taken. Showing the age range weight and height.

The significance of the pre and post test noted for the boys and girls in all the fitness test suggest that the Eurofit Motor Test could reliably measure the Motor fitness of Nigerian children.

Analysis of the subject ages indicated that majority of them were 13 – 14 years old while only few were aged 12 and 15 years. These group of 14 – 13 years old represented about 85 percent of the total number of subjects and probably explain the maximum mean ages of the boys and girls in the study.

In all measurements, greater variations were noted for the boys between testing sessions as compared to girls.

The general hypothesis states that there will be no significant difference in children's, responses to Eurofit Motor Test following 8 weeks during exercise programme. Results in table 4 and 5 showed that there was significant difference between pre and post values of Eurofit Motors Test after 8 weeks of training programme among Nigerian children on most of the tests. Therefore the hypothesis was rejected.

Conclusion

But there was significant difference in the fitness level of the Nigerian children. In the selected test used in the study, both female and male performed better in standing on one foot, but had lower score in 6 mins run test carried out, there was slight difference between the male and female. Generally it could be said that they possess an adequate level of Motor fitness status.

Recommendations

Eurofit Motor Test is certainly important in the fitness if Nigerian children and should not be ignored in training them for fitness. In view of the above and as a result of the findings of this research study, the following recommendations are made:

All institutions of learning in Nigeria should introduce youth fitness programmes. It is also necessary to educate the masses on the importance of participating in youth fitness programmes. In this case the media should be effectively used to mobilize the public, and also to understand the nature of children.

It is also necessary for participants in the youth fitness programmes to undergo a mandatory medical examination before participating. This will help to identify these youths with health problems. The consent of both the youths and their parents or guardians should be sought in writing before accepting them to participate in the programme.

There is also need to introduce variety into the programme this will help to meet the needs and characteristics of the participants and also sustain their interest in the programme.

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