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The Physical Performance of Arbaminch Town Athletics Club Athletes Based On Some Selected Skill Related Physical Fitness in the Preparatory Period

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Abstract: The purpose of the present study was to investigate the selected physical fitness variables of Arba Minch town athletics club athletes' who trained four days a week in the preparatory period. By using purposive sampling technique, the researcher used all 10 athletes who trained in the club. Their age ranged between 20-29 years. It was hypothesized that no significant difference would be found between selected physical fitness variables agility (Illinois test) and endurance (12 minutes cooper test). For analysis of the data, Mean & SD were calculated and to examine the significance difference between the group mean of different physical fitness variables, „T" test was applied, and level of confidence was set at .05 levels. Study concluded that nosignificant difference found between the means of selected physical fitness variables such as agility (Illinois test) and endurance (12 minutes cooper test).

Key words:agility, cooper test, Illinois, physical fitness

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I. INTRODUCTION

It is well-known that the physical properties of muscles differ among various types of elite athletes. When comparing the muscles of sprinters and long-distance runners, distinct differences can be observed. In sprinters large numbers of fast-twitch muscle fibers are required to accelerate in a transient period, whereas for long-distance runners a greater number of slow-twitch muscle fibers are required to maintain their own pace during a relatively long-lasting race (Costill et al., 1976). Middle distance, & Long distance races which is an excellent track & field sports has been widely accepted as a highly competitive as well as recreational event all over the world. The sports performance is not a product of one single system. It is the product of the total physique of the sports person. (Tandon, 2001).

The apparently simple skill of sprinting is actually dependent on an "athlete's ability to combine the actions of the legs, arms, trunk and so on into a smoothly coordinated whole" (Hay, 1993).

The initial testing session can give the athlete an idea of where their fitness levels are at the start of a program, so that future testing can be compared to this and any changes can be noted. A baseline is especially important if you are about to embark on a new training phase. Subsequent tests should be planned for the end and start of each new phase.

By repeating tests at regular intervals, you can get an idea of the effectiveness of the training program. The period between tests can depend on the availability of time or costs involved, or the phase of training the athlete is in. Depending of these factors, the period between tests may range from two weeks to six months. It usually takes a minimum of 2-6 weeks to see a demonstrable change in any aspect of fitness. (topendsport.com/testing/guide.htm.)

When we see the physical fitness test of Athletes before starting training, the middle of the training and after training (when approaching competition period) in Ethiopia is very poor. Therefore, the researcher has understood the problem that it is not familiar throughout the country, but the researcher has done on Arbaminch Athletics club to manage the research

Factors affecting VO_2 max that the physical limitations that restrict the rate at which energy can be released aerobically.

- The chemical ability of the muscular cellular tissue system to use oxygen in breaking down fuels
- The combined ability of cardiovascular and pulmonary systems to transport the oxygen to the muscular tissue systemhttps://www.brianmac.co.uk/vo2max.htm.

Purpose of the study

The purpose of this study was to investigate the physical performance of some selected skill related physical fitness of Arbaminchtown athletics clubathletes.

Method and data collection method

Subjects –Totally ten athletes were selected for the study by using purposive sampling technique. The tests were conducted in the beginning of the preparatory period. Their age between 23+-2 years. Necessary permission taken from Arbaminch sport office and the coaches.

Table 1:*list of variables tasted and recorded*

Serial	Subjects	Numbers	Test	Equipment's
01	Female athletes Male athletes	2 8	Agility Illinois test	Stop watch nearest to.oo1 seconds and cones
02	Female athletes Male athletes	2 8	Endurance Cooper test	Meter, stop watch

For measurement of selected physical fitness variables of Arba Minch town Athletics club athletes AAHPERY youth physical fitness test was utilized. The test was conducted at Arbaminch university Abaya campus soil track.

Statistical analysis

Mean and Standard Deviation was computed. Comparison was made based on activity i.e. Arba Minch town Athletics club with international standards. For this purpose, „T" test was applied. All analyses were performed using the IBM SPSS Statistics (v. 21, New York, U.S.A.) and data are shown as mean ± SD. An alpha value of $p < 0.05$ was set as the criterion level of significance.

II. RESULTS AND FINDINGS OF THE STUDY

Table 2:*Agility (Illinois test) and endurance (cooper test) result of Arba Minch town athletics club athletes*

Component	Group	Mean	Standard deviation
Agility Illinois test	Female Male	19.80 19.12	.14 .636
Cooper test	Female Male	1888.0 2445.5000	0 366.13073

Significance at .05 levels "T" Value required to be significant at .05 level

Table 3:*Illinois test normative data*

Gender	Excellent	Above Average	Average	Below Average	Poor
Male	<15.2 secs	15.2 - 16.1 secs	16.2 - 18.1 secs	18.2 - 19.3 secs	>19.3 secs
Female	<17.0 secs	17.0 - 17.9 secs	18.0 - 21.7 secs	21.8 - 23.0 secs	>23.0 secs

For 16 to 19-year-olds (Davis et al. 2000)

- ✓ The above table (2) showed that agility Illinois test of Arbaminch town Athletics club female athletes mean is 19.8 seconds in the deviation of 0.14.
- ✓ When we compare this result with the normative data (table 3) Arbaminch town club female athletes result failed in average standard of the normative data.
- ✓ The above table (2) showed that agility Illinois test of Arbaminch town Athletics club male athletes mean is 19.12 seconds in the deviation of 0.636.
- ✓ When we compare this result with the normative data (table 3) Arbaminch town club male athletes result failed in below average standard of the normative data.

Table 4:*Male Athletes 12 minutes cooper test normative data, Cooper (1968)*

Age	Excellent	Above Average	Average	Below Average	Poor
13-14	>2700m	2400-2700m	2200-2399m	2100-2199m	<2100m
15-16	>2800m	2500-2800m	2300-2499m	2200-2299m	<2200m

17-19	>3000m	2700-3000m	2500-2699m	2300-2499m	<2300m
20-29	>2800m	2400-2800m	2200-2399m	1600-2199m	<1600m
30-39	>2700m	2300-2700m	1900-2299m	1500-1999m	<1500m
40-49	>2500m	2100-2500m	1700-2099m	1400-1699m	<1400m
>50	>2400m	2000-2400m	1600-1999m	1300-1599m	<1300m

Table 5: *Female Athletes12 minutes cooper test normative data, Cooper (1968)*

Age	Excellent	Above Average	Average	Below Average	Poor
13-14	>2000m	1900-2000m	1600-1899m	1500-1599m	<1500m
15-16	>2100m	2000-2100m	1700-1999m	1600-1699m	<1600m
17-20	>2300m	2100-2300m	1800-2099m	1700-1799m	<1700m
20-29	>2700m	2200-2700m	1800-2199m	1500-1799m	<1500m
30-39	>2500m	2000-2500m	1700-1999m	1400-1699m	<1400m
40-49	>2300m	1900-2300m	1500-1899m	1200-1499m	<1200m
>50	>2200m	1700-2200m	1400-1699m	1100-1399m	<1100m

Table 6:*12 minutes cooper testnormative data (Heywood 2006)[1] for Male (values in ml/kg/min)*

Age	Poor	Fair	Good	Excellent	Superior
20 - 29	<42	42 - 45	46 - 50	51 - 55	>55
30 - 39	<41	41 - 43	44 - 47	48 - 53	>53
40 - 49	<38	38 - 41	42 - 45	46 - 52	>52
50 - 59	<35	35 - 37	38 - 42	43 - 49	>49
60 - 69	<31	31 - 34	35 - 38	39 - 45	>45
70 - 79	<28	28 - 30	31 - 35	36 - 41	>41

Table 7:*12 minutes cooper test Normative data (Heywood 2006) for Female (values in ml/kg/min)*

Age	Poor	Fair	Good	Excellent	Superior
20 - 29	<36	36 - 39	40 - 43	44 - 49	>49
30 - 39	<34	34 - 36	37 - 40	41 - 45	>45
40 - 49	<32	32 - 34	35 - 38	39 - 44	>44
50 - 59	<25	25 - 28	29 - 30	31 - 34	>34
60 - 69	<26	26 - 28	29 - 31	32 - 35	>35
70 - 79	<24	24 - 26	27 - 29	30 - 35	>35

- ✓ The above table (2) showed that endurance (12 minutes cooper test) ofArbaminch town Athletics club female athletes mean is 1888 meter in the deviation of 0.

- ✓ When we compare this result with the normative data (table 5) Arbaminch town club female athletes result failed in the average standard of the normative data.
- ✓ Based on this result for the estimation of athletes VO2 max can be calculated by this formula (Distance covered in meters - 504.9) ÷ 44.73) https://www.brianmac.co.uk/gentest.htm Arbaminch town athletics club male athletes result become (1888-504.9)/44.73 the VO2 max result is 30.92 ml/kg/min. this shows that Arbaminch town athletics club female athletes result indicates poor based on (table 7) normative data.
- ✓ The above table (2) showed that endurance (12 minutes cooper test) of Arbaminch town Athletics club male athletes mean is 2445.5 meter in the deviation of 366.13.
- ✓ When we compare this result with the normative data (table 4) Arbaminch town club female athletes result failed in the above average standard of the normative data.
- ✓ Based on this result for the estimation of athletes VO2 max can be calculated by this formula(Distance covered in meters - 504.9) ÷ 44.73) https://www.brianmac.co.uk/gentest.htm Arbaminch town athletics club male athletes result become (2445.5-504.9)/44.73 the VO2 max result is 43.385ml/kg/min. this shows that Arbaminch town athletics club male athletes result indicates fair based on (table 6) normative data.

III. CONCLUSION

- ✓ The results of Arbaminch town athletics club athletes' performance level based on the normative data shows that the female athletes have average in endurance (based on cooper test). In the same hand they have average result in agility test (based on Illinois test).
- ✓ The result indicated that the male athletes of arbaminch town have below average result in their agility test (based on Illinois agility test) with reference to the normative data. But the male athletes of Arbaminch town athletes club endurance (based on 12 minutes run cooper test) result shows that they are above average.
- ✓ Arbaminch town athletics club VO2 max was calculated based on their cooper test result and that shows the female athletes have poor VO2 related to the normative data. The male athletes of Arbaminch town results also indicated that they have fair result with reference to the normative data.
- ✓ The researcher concluded that Arbaminch town athletics club has wide gap to enter into excellent category on these selected performance related (skill related) fitness.

IV. RECOMMENDATIONS

- Recommendations for future research works
- ✓ Several researches have been undertaken in different sport disciplines to identify fitness levels of club athletes current performance.

  Therefore, the researcher the future researchers that:-
- ✓ They should try to know the current fitness levels of the athletes,
- ✓ The future researchers should take the total population of the club athletes, to give feedback for each athlete.
- Recommendations for coaches and Administrators

  The researcher would like to recommend that:-
- ✓ The coaches should take the test before the training is started,
- ✓ The coaches should record the results of athletes,
- ✓ The coaches must set their goal based on the result of the pre tests of the athletes,
- ✓ Administrators should help the coaches and athletes to measure the tests the performance of athletes.

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