Effect of the use of the Fartlek training on some physical components and special abilities and the level of digital achievement of the contestants 400 meters sprint

*Prof. Dr/ Osama Ahmed Mohamed Zaki
**Prof. Dr/ Amgad Zakaria Ahmed Abdel-all

Introduction and problem of research:

Field and track competitions are sports that translate and reflect objectively the extent of athletic progress as objectively assessing human achievement in digital levels such as sprint and walking times, jumping and throwing competitions, and points in complex competitions.

It is worth mentioning that the 400-meter race of races of particular interest from competitors and coaches as well as the public because they are characterized by excitement and strength in performance and therefore researchers sought to discover the best ways to improve.(7:56)

Zaki Mohammed Darwish, Adel Abdulhafeez (1997) added that there is a clear fact that can not be ignored is that the 400 meters race can not exceed the maximum speed of the contestant from the first race to the end where the high intensity affects the ability to continue to perform because this race is longer The sprint races as it needs to overlap many aspects (physical, physiological, psychological, and diaphragm) (23: 102, 103)

In the opinion of Abul-Ela 'Abd El-Fattah (1997) that physical pregnancy is the basis for the upgrading of the physical level, and that there is a close relationship between physical pregnancy and the body reactions of reactions resulting from exposure to different physical loads and the extent of adaptation of the organs and muscles of the body of these loads. (1: 43)

Novakacki (2001) finds that the efficiency of the circulatory and respiratory

* Assistant Prof , department of theories and application track and field , faculty of physical education for men , Zagazig university
** Assistant Prof , department of Sport training and kinesiology , Faculty of Physical education for men , Zagazig University.

devices means the body's ability to take and transfer oxygen and use it inside the muscle cells to provide energy for physical exertion. Maximum aerobic capacity is an indicator of the efficiency of the circulatory and respiratory organs. It means the ability of the individual to consume the maximum oxygen. (21: 115)

Dal Monte and Miri (2003) note that physical activity is accompanied by many physiological and physical processes and changes that enable the body to meet the demands of physical exertion. The regularity of the individual in the training leads to functional changes in the vital organs. (10: 236)

Baha Salameh (2000) states that the ability of the individual to continue the effort depends on the ability of the muscle groups to continue the contraction of the muscle and the passage of oxygen to the cells of the muscle groups as well as many physiological changes that occur within the body (6: 61)

The speed training is called "Speed Plays", which is a method of training using different speeds. The practitioner feels pleasure when performing without feeling overloaded. This method includes a stage of rapid action followed by a lower speed or shorter periods of performance to help the speed of recovery As it has many images and many forms have been used by many stars of athletics and achieved sporting victories, international and international, which is appropriate to different age groups.(24)

Bastoise Ahmed (1999) states that the training of the Fartlek is used by the trainers in order to improve the speed and strength, and thanks to this method, the numbers jumped in the short, medium and long distances. (8: 170)

Brandon, L. et al. (2004) adds that the training of the Fartlek is flexible and can be performed anywhere (athletics, green fields, beaches, highlands). It also develops aerobic and aerial work during the single module, The physiology of each of these shows the importance of varietal, which is characterized by changing places and varying

speeds of performance to create excitement and excitement and seriousness and activity on performance. (9: 89)

In the view of "Abul-Ela Abdel-Fattah, Mohamed Sobhy Hassanein" (1997) that the composition of the body adds a new dimension to the understanding of the exercise itself, as the accurate measurement of the composition of the body gives information of high value in the determination of the ideal weight in which the player can reach the so-called This is necessary for adaptations to training. (2: 295, 324)

And the exercise of sports activity for long periods affect the physical shape of the players and earn them specific physical specifications, which are in themselves the basic competencies to reach the high level in the exercise activity, the increase in muscle mass and strength accompanied by clear changes in the Great System and the proportion of fat (19: 258)

Wilmor, Costilla (2004) adds that body composition is not a binary composition that includes body mass without fat, ie, the fat-free mass of bones, muscles, internal organs, and connective tissues. (22: 383)

The importance of this research is evident in the practical benefit that can be achieved through the results that can be guided by the training process to reach the highest levels of digital achievements.

It also shows the importance of this research as an attempt to raise boredom and remove the stereotypes from the training process, to transfer the training process from general to private depending on the type of performance and type of muscles involved in it and contribute to the rise of the physical and skill level to the required limits.

The problem of the researcher, as noted by the researchers through their work in the teaching and training of field and track competitions and view them on many previous studies and follow-up records and a drop in the digital level of the 400 meters race in the second grade secondary high school athletics sports school for the academic

year 2016/2017 and this decline The researcher attributed several reasons for these reasons to weakness in some physical components and special abilities (physical and physiological) of these students, not to know the geometry of the human body and how it works in normal life.

Therefore, the researchers considered the need to develop a proposed training program using the Fartlek training and to know the effect of this on some physical components and special abilities in an attempt to improve the level of digital achievement of the 400 meters race for the members of the research sample. Speed, endurance, and speed. The training process will be transferred to new horizons that are exciting, fun and exciting.

- Objective of the research:

This research aims to design a proposed training program using the exercises and identify of the effects on:

1 - Some physical components of the members of the research sample.

2 - Some special abilities (physical, physiological) of the members of the research sample.

3- The level of digital achievement of 400 meters race for the members of the research sample.

- Research hypotheses:

The proposed training program will affect by using the Fartlek training positively on:

1 - Some physical components of the members of the research sample.

2 - Some special abilities (physical, physiological) of the members of the research sample.

3- The level of numerical achievement of 400 meters race for the members of the research sample.

- Search terms:

Fartlek is one of the modern methods, which is the term Swedish Fartlek literally means playing at variable speeds, which is sprint for different distances length, short, medium and long speeds and variable aerodynamic and anaerobic to extreme intensity and the sprint distance to change in nature.(24)

• Research procedures:

- Research Methodology:

The researchers used the experimental approach in

designing the tribal and subdivision measurements for one experimental group in order to suit the nature of the research.

- The sample of the research:

The sample of the research was chosen in a deliberate way from the total community of the research, which number (20) players in athletics in the second grade in the secondary school of sport in Zagazig for the academic year 2016/2017. A sample of 12 high - In addition to (5) other players for the exploratory experience of the same research community and excluded 3 players for injury and the following tables (1), (2), (3), (4) Physical - physiological) and digital level and physical components are under consideration.

Table (1)

Characterization of the research sample

total sample search	Sample exploratory research		Sample experimental research		Excluded		research community	
	Number	Percentage %	Number	Percentage %	Number	Percentage %	Number	Percentage%
20	5	25 %	12	60 %	3	15 %	20	100 %

Table (1) shows that the research society (20) player, sample survey study (5) players, basic search sample (12) player and excluded (3).

Table (2)

Homogeneity of the total research sample in growth variables

N = (17)

Variables	measuring unit	SMA	standard deviation	Mediator	Skweness
Age	Year	16.64	0.75	16	0.24
height	c.m.	170.53	3.34	170	0.48
the weight	k.g.	67.29	2.54	67	0.35

Table (2) shows that all torsion values ranged between 0.24 and 0.48 in the growth variables. All these values were limited betwee] [-3،+3], indicating the homogeneity of the research sample

Table (3)
Homogeneity of the total research sample in the special abilities (physical - physiological) The numerical level under study N = (17)

Variables				measuring unit	SMA	standard deviation	Media tor	Skweness
1	Special capabilities	Physical	Sprint 50 m from the low start	a second	5.92	0.04	5.98	0.16
2			endurance speed	a second	97.30	1.74	97.60	-0.51
3			Strength of back muscles	Kg	145.59	7.51	147	-0.56
4			Compatibility	a second	11.01	0.40	11.20	-1.41
5			Strength of the muscles of the two men	Kg	135.76	5.27	135	0.43
6		Physiological	Pulse before effort	Pulse / s	70.35	1.54	71	-1.26
7			Pulse after effort	Pulse / s	194.94	2.63	195	-0.07
8			Maximum absolute oxygen consumption	L / s	2.87	0.03	2.85	0.03
9			Absolute dynamic capacity after effort	Ml / l	3851.24	2.39	3852	0.30
10			Systolic blood pressure in rest	Mm / Hg	119.24	1.00	119	1.06
The digital level of the 400 m / sprint				Per second	61.81	0.57	62.10	-1.50

Table (3) shows that all torsion values ranged between (-1.5: 1.06) and were all confined between [-3،+3], indicating the homogeneity of the research sample in the special abilities (physical - physiological) and digital level.

Table (4)
Homogeneity of the total research sample in physical components
N = (17)

Physical measurements	measuring unit	SMA	standard deviation	Mediator	Skwenes s
View map	cm	35.93	0.98	36	-0.22
Chest width	cm	26.41	1.00	27	-1.76
Circumference of forearm	cm	23.88	1.11	24	-0.32
Chest circumference	cm	88.29	1.16	89	-1.83
The perimeter of the center	cm	67.71	0.99	68	-0.90
Thigh circumference	cm	43.88	1.22	44	-0.29
Thickness of folds of fat	cm	0.53	0.01	0.53	-0.93
BMI	Kg / m 2	22.63	0.96	22.49	0.44

It is clear from Table (4) that all the values of torsion coefficients for the total research sample ranged between (1.83 - 0.44) in the physical components. These values were limited between[-3،+3] indicating that the research sample is homogeneous in the measurement variables The body and its consequences represent the society moderately.

- Measuring instruments and instruments used:

- Resimeters for height measurement (cm)
- Medical balance Calibrations for weight measurement (kg) - Blood pressure monitor - Dynamometer device for measuring the strength of back muscles and legs - Stop watches for nearest 100/1 w - Flags, cones, signs and chalk - Cotton bags and cleansing tools - Rubber bars and ropes - Tape measure.

- Measurements used in research:

Attachment (1) (3), (4), (5), (6), (14), (17), (21), (24), as well as previous studies and discussion with experts and trainers. The most important physical and physiological abilities as well as physical components are as follows:

- Speed test with a distance of 50 m from the start to the low in the second - Measuring the speed bearing 600 meters per second. - The dynamometer to measure the strength of the back muscles and the two legs in the skull.- Compatibility

measurement by testing the numbered circuits.
- Measurement of systolic blood pressure in rest mm / Hg.
- Pulse rate measurement (stethoscope) or spying pulse method / s. - Measuring the maximum oxygen consumption VO2max L / s.
- Measurement of absolute biological capacity after exertion / ml. - Measuring the width of the ulcer. - Measuring the width of the chest with the poison. - Measurement of the chest circumference with the name.
- Measuring the circumference of the forearm with the poison.
- Measuring the circumference of the forearm with the poison.
- Circumference of the middle with the name. - Thigh circumference of the thigh. - Thickness of the folds of the fat with the cream. - Body Mass Index (BMI / m 2).

- Survey study:

- The researchers conducted the survey during the period from Tuesday, 27/9/2016 to Sunday, 2/10/2016, on a sample of (5) players to determine the suitability of the Varlet training for the research sample and all the tools used to verify the tests and measurements. Scientific tests used (honesty - persistence)

Honesty: The researchers used two groups, one distinct from the research community and the other outside the basic sample, with 5 students and the other non-distinguished students of the first grade in secondary school in Zagazig, the number of (5) students.

Table (5)

The significance of the differences between the distinct and non-distinguishing groups in the special abilities (physical-physiological) and the numerical level in question N = N 2 = 5

Variables				Featured Group		The unmarked group		Value of "T"
				SMA	standard deviation	SMA	standard deviation	
1	Special capabilities	Physical	Sprint 50 m from the low start	5.90	0.05	6.48	0.11	7.941*
2			endurance speed	96.90	1.48	102.44	2.04	4.920*
3			Strength of back muscles	142	6.40	131.20	3.63	3.280*
4			Compatibility	11.24	0.33	12.95	0.05	4.474*

Follow Table (5)
The significance of the differences between the distinct and non-distinguishing groups in the special abilities (physical-physiological) and the numerical level in question N = N 2 = 5

Variables				Featured Group		The unmarked group		Value of "T"
				SMA	standard deviation	SMA	standard deviation	
5			Strength of the muscles of the two men	132.60	4.34	122	2.55	4.712*
6		Physiological	Pulse before effort	69.80	1.64	71.20	1.84	6.896*
7			Pulse after effort	193..40	2.07	189.60	1.14	3.519*
8			Maximum absolute oxygen consumption	2.85	0.03	2.36	0.06	4.016*
9			Absolute dynamic capacity after effort	3850.24	192.35	3440	151.66	3.469*
10			Systolic blood pressure in rest	119.60	1.14	116.40	1.67	3.534*
The digital level of the 400 m / sprint				62.06	0.59	64.87	0.12	6.436*

The value of "T" is the tabular at 0.05 and the freedom degrees 8 = 2.306

Table (5) shows that there are statistically significant differences in the physical (physiological-physiological) abilities and the numerical level between the distinct and non-distinctive group and for the benefit of the characteristic group. The value of the calculated "T" exceeded the "table" at a significant level of 0.05, 8, demonstrating the sincerity of the results of these tests, and their ability to discriminate.

Stability: The researchers used the method of application of the test and applied it to a sample of (5) students from the research community and outside the basic sample with a time difference of 5 days between the two applications and then finding the correlation coefficient between the first and second applications.

Table (6)
The correlation coefficient between the first and second applications in the special abilities (physical-physiological) and the numerical level under study (N = (5)

Variables				The first application		Second Application		Value of " The correlation coefficient
				SMA	standard deviation	SMA	standard deviation	
1	Special capabilities	Physical	Sprint 50 m from the low start	5.90	0.05	5.92	0.04	0.953*
2			endurance speed	96.90	1.48	96.71	1.20	0.972*
3			Strength of back muscles	142	6.40	144.10	4.70	0.905*
4			Compatibility	11.24	0.33	11.75	0.27	0.970*
5			Strength of the muscles of the two men	132.60	4.34	132	2.14	0.963*
6		Physiological	Pulse before effort	69.80	1.64	70.70	1.36	0.910*
7			Pulse after effort	193.40	2.07	195.20	2.30	0.895*
8			Maximum absolute oxygen consumption	2.88	0.04	2.86	0.05	0.935*
9			Absolute dynamic capacity after effort	3850.24	192.35	3851	154.76	0.812*
10			Systolic blood pressure in rest	119.60	1.14	117	1.50	0.890*
The digital level of the 400 m / sprint				62.06	0.59	62.32	0.74	0.960*

The value of " The correlation coefficient " is the tabular at 0.05 and the freedom degrees 3 = 0.878

Table (6) shows the existence of a statistically significant correlation between the first and second applications of the physical (physiological) and the numerical level of the exploratory group, where the correlation coefficient (t) is more than the mean value of 0.05 and the freedom scores 4.

•**Proposed training program**:

Annex (2)

- Objective of the program: This program aims to identify the effect of the training of the Fartlek on some physical components and special abilities (physical, physiological) and the level of digital achievement of the race 400 meters in the members of the research sample as well as diversification and suspense in

the training program to achieve its objectives.

- Program development:

(5), (8), (11), (10), (20), as well as previous studies and discussions with experts, trainers and similar programs. The researcher determined the period of application of the program (10) weeks of training by (3) training modules per week and this includes the program on (30) training modules, the time of each unit of (80-90) minutes. The time content of the proposed training program is as follows:

- The total number of units of the program (30) units.
- Number of weekly training units (3) units.
- The total time of the training module ranges between (80-90) minutes.
- Primer time is between 10-15 minutes.
- The main part is between 60-70 minutes.
- The final part is between 5-10 minutes.

• Components of the training load for the proposed program:

By examining specialized scientific references (6), (8), (10), (18), (20) as well as previous studies and discussion with experts and trainers, the researcher identified the components of the training load as follows:

- Intensity: Intensity

The intensity of the Fartlek training in the program ranged from 65-85% of the maximum performance per capita.

- Load size: (Time (Duration

The duration of the practice of the Fartlek exercises ranged from 60 to 70 minutes, and the number of repetitions ranged from (6-8) repetitions per exercise and the number of groups (3-5) total.

- Intervals: Frequency

The researcher observed that the interstitial intervals are sufficient so that the frequency of pregnancy does not occur in the fatigue stage, leading to the development of the selected research variables and the absence of injury to the members of the research sample.

• Division of training modules:

- Warm-up:

This section aims to prepare the working muscles and the periodic and respiratory systems for the type of muscular work to be carried out in the main part. The

duration of the implementation of this part of the training unit ranged between (10-15) minutes.

- The main part:

This part of the training module contains the exercises that achieve the goal of the program. This part contains the special preparation exercises for the 400 meters race. It also contains the training of the Varlet which permeates the training modules as well as the preparation exercises. This part takes between 60-70 minutes of time Module.

- Closing part:

This section contains light exercises that will return the body organs to normal and the length of this part between (5-10) minutes of the training time.

• Execute the search experience:

- Tribal measurements: Tribal measurements were made on the members of the basic research sample at Zagazig University Stadium on Tuesday, 4/10/2016. The physical variables were measured and the digital level was measured for 400 m / s. The next day, the physical components and the physiological variables were examined. Physical Fitness Unit, Faculty of Physical Education for Boys, Zagazig University.

- Basic experience:

The proposed training program applied to a sample basic research during the evening and after sufficient time food intake so as to allow training without exposure sample to any trouble or stress and under the supervision of researchers and starting on Sunday, 9 th / 10/2016 until Thursday, 15/12 / 2016, The two researchers took into account the application of the proposed training program according to the scientific method and following the principles The training program was based on the study sample. And the program was implemented over a period of ten weeks by three training units per week and the duration of the training module (80-90) depending on the degree of pregnancy characterized by the specific training week and according to the principle of gradual pregnancy.

- Dimension measurements: The dimension measurements were carried out on the members of the basic research sample at Zagazig University Stadium on Sunday 18/12/2016. The physical variables were measured and the numerical level of 400 m / s was measured. The next day, Faculty of Physical Education, Zagazig University. The

researcher took care that the dimension measurements are carried out in the same conditions and under the same conditions as the tribal measurements.

• Statistical treatments:

The following statistical treatments were used:

- mean - computation - correlation coefficient - standard deviation - test T 'test - median. - Improvement rates. - Torsion factor – Skweness.

• Presentation and discussion of the results:-

- First: Display the results

Table (7)

The significance of the differences between the pre - and tribal measurement of the experimental sample in Physical measurements under study N = (12)

Physical measurements	Tribal measurement		Dimensional measurement		Average difference	Value of "T"
	SMA	Standard deviation	SMA	Standard deviation		
View map	36.07	1.02	35.04	1.03	1.03	1.971
Chest width	26.33	0.98	24.67	1.23	1.67	4.212*
Circumference of forearm	23.83	1.11	23.00	0.85	0.83	2.057
Chest circumference	88.42	1.24	86.92	1.31	1.50	9.950*
The perimeter of the center	67.92	1.00	66.42	1.08	1.50	5.196*
Thigh circumference	44.00	1.28	42.17	1.27	1.83	3.00*
Thickness of folds of fat	0.53	0.01	0.51	0.01	0.02	5.934*
BMI	22.69	0.92	21.66	0.89	1.02	6.227*

The value of "t" is tabular at 0.05 and freedom degrees 11 = 2.201

Table (7) shows that there are statistically significant differences in the physical tests in the study between the tribal measurement and the telemetry and for the benefit of the remote measurement in the experimental research sample. The value of the calculated value T exceeded the tabular value of the value of 0.05, And the degree of freedom 11. The table also indicates that there were no statistically significant differences in the results of the measurement of the width of the shoulders and the circumference of the forearm. The calculated value of T was greater than the tabular value of T at a significant level of 0.05 and the freedom degree of 11.

Table (8)
Percentage improvement in body measurements of the experimental group under study N = (12)

Variables	The experimental group		Improvement rate %
	Average Tribal measurement	Average Dimensional measurement	
View map	36.07	35.04	2.86 %
Chest width	26.33	24.67	6.30 %
Circumference of forearm	23.83	23.00	3.48 %
Chest circumference	88.42	86.92	1.70 %
The perimeter of the center	67.92	66.42	2.21 %
Thigh circumference	44.00	42.17	4.16 %
Thickness of folds of fat	0.53	0.51	3.77 %
BMI	22.69	21.66	4.54 %

Table (8) shows the presence of improvement rates in the physical measurements of the experimental sample in the study. The values were between 6.30% for chest width variable and 1.70% for chest circumference variable.

Table (9)
The significance of the differences between the measurement of tribal and infidelity in the special abilities (physical - physiological) For the experimental group under study N = 12

	Variables			Tribal measurement		Dimensional measurement		Average difference	Value of "T"
				SMA	standard deviation	SMA	standard deviation		
1	Special capabilities	Physical	Sprint 50 m from the low start	5.93	0.04	5.56	0.11	0.37	6.944*
2			endurance speed	97.39	1.74	91.84	1.91	5.55	6.603*
3			Strength of back muscles	146.17	7.27	147.33	7.22	3.16	2.185
4			Compatibility	11.05	0.41	9.45	0.44	0.60	6.092*
5			Strength of the muscles of the two men	135.58	5.90	144.42	6.36	8.84	8.456*

Follow Table (9)
The significance of the differences between the measurement of tribal and infidelity in the special abilities (physical - physiological) For the experimental group under study N = 12

Variables				Tribal measurement		Dimensional measurement		Average difference	Value of "T"
				SMA	standard deviation	SMA	standard deviation		
6		Physiological	Pulse before effort	70.50	1.62	65.58	1.70	4.92	6.905*
7			Pulse after effort	195.08	2.87	183.83	1.90	11.25	6.125*
8			Maximum absolute oxygen consumption	2.88	0.03	3.04	0.07	0.16	4.521*
9			Absolute dynamic capacity after effort	3853.20	2.43	3962.50	3.72	58.33	6.847*
10			Systolic blood pressure in rest	119.42	1.08	126.25	1.76	6.83	3.146*

The value of T is the tabular at 0.05 and the freedom degree is 11 = 2.201

Table (9) shows that there are statistically significant differences in the physical (physiological) abilities between the pre-test and the pre-test for the experimental sample, where the value of the calculated "T" exceeded the tabular value of "T" at a significant level of 0.05 and the degree of freedom 11, The table showed differences, but not statistically significant, in the strength test of the back muscles. The calculated value of T was less than the value of the t table at a significant level of 0.05 and the freedom score of (11).

Table (10)
Percentage improvement rates in special abilities (physical - physiological) For the experimental group under study N = 12

Variables				The experimental group		Improvement rate % "
				Average tribal measurement	Average distance measurement	
1	Special capabilities	Physical	Sprint 50 m from the low start	5.93	5.56	6.24 %
2			endurance speed	97.39	91.84	5.70 %
3			Strength of back muscles	146.17	147.33	2.16 %
4			Compatibility	11.05	9.45	5.43 %
5			Strength of the muscles of the two men	135.58	144.42	24.85 %
6		Physiological	Pulse before effort	70.50	65.58	6.98 %
7			Pulse after effort	195.08	183.83	5.77 %
8			Maximum absolute oxygen consumption	2.88	3.04	5.56 %
9			Absolute dynamic capacity after effort	3853.20	3962.50	2.84 %
10			Systolic blood pressure in rest	119.42	126.25	5.72 %

Table (10) shows an improvement in the physical (physiological) capacity of the experimental sample in the study. The values were between 24.85% for the variable strength of the muscles of the two legs, 2.16% for the variable strength of the back muscles.

Table (11)
The significance of the differences between the tribal and algebra measurement at the numerical level of the experimental group under study n = 12

Variables	Tribal measurement		Dimensional measurement		Average difference	Value of "T"
	SMA	standard deviation	SMA	standard deviation		
The digital level of the 400 m / sprint	61.79	0.56	59.40	0.60	2.39	6.155*

Table (11) shows statistically significant differences between the measurement of the tribal and the arithmetic and the dimension of the dimension at the numerical level, where the value of the calculated "T" exceeds the "table".

Table (12)

The improvement ratios between the tribal measurement and the scale at the numerical level of the experimental group under consideration

Variables	The experimental group		Improvement rate % "
	Average tribal measurement	Average distance measurement	
The digital level of the 400 m / sprint	61.79	59.40	3.87 %

Table (12) shows an improvement in the digital level of 3.87%.

Second: Discussion of the results:

- Discuss the results of the first hypothese:

Table (7) shows that there are statistically significant differences in the physical tests in the study between the tribal measurement and the telemetry and for the benefit of the remote measurement in the experimental research sample. the value of the calculated value T exceeded the tabular value of the value of 0.05, the degree of freedom (11).

The researchers attributed this positive effect in the general surroundings and symptoms of the body to the vocabulary of the proposed training program using the exercises of the Fartlek, which was exercised regularly, which led to energy consumption and decrease body fat.

This is consistent with the findings of Majid Mohammed Al-Azzazi (2000) (14) , that the training program led to the development of physical fitness and physical components, and also with the finding of Ahmed Abdul Hamid Ali (2006) (3) ,that the development of aerobic capacity according to some physical components to develop endurance and develop those physical components in question,

In this regard, Ibrahim Ahmed Sallam (2000) believes that the return of regular physical exercise leads to the

reduction of fatty tissue around the muscle fibers. Therefore, the lack of peripheral measurements, BMI, weight and fat percentage is due to lack of fatty tissue and is often more than the increase in mass size (12: 122)

The table also indicates that there are no statistically significant differences in the results of the measurement of the width of the shoulders and the circumference of the forearm, where the value of the calculated "T" is greater than the value of the "T" table at a significant level 0.05 and the degree of freedom (11). Fat compared to the rest of the regions and needed more time in the program.

Table (8) shows the improvement in the physical measurements of the experimental sample in the study. The values were between 6.30% for the chest width variable and 1.70% for the circumference of the chest circumference. other physical components (shoulder width, forearm circumference, waist circumference, thigh circumference, (BMI) improved (2.86%, 3.48%, 2.21%, 4.16%, 3.77% and 4.54%), respectively.

The researchers attributed this positive effect on the general surroundings and symptoms of the body to the vocabulary of the proposed training program using the Fartlek exercises, which was practiced regularly over a period of ten weeks, 3 training units per week.

This is in line with the findings of Majid Mohammed Al-Azzazi (2000)(14), Ahmed Abdul Hamid Ali (2006) (3) , Ibrahim Ahmed Sallam (2000) (12) , that the training program led to the development of physical fitness and physical components.

The results of tables (7) and (8) show that the first objective has been achieved and that the first hypothesis that " Fartlek exercises positively affect some of the body components of the research sample can be validated.

- Discuss the results of the second hypothese:

Table (9) shows that there are statistically significant differences in the physical (physiological) abilities between the pre-test

and the remote dimension of the experimental sample.

The researchers attributed the reason to the effect of the proposed training program using the training of the Fartlek and its contents of pregnancy spikes and continuity in the training in the scientific way has had a positive impact on the special abilities, which led to the existence of differences statistically significant in physical abilities (speed test sprint 50 meters from low start, (Pulse speed 600 meters, muscle strength and compatibility) and physiological abilities (pulse before exertion, post-exertion pulse, absolute maximum oxygen consumption, absolute vital capacity after exertion, blood pressure at rest) for The members of the research sample.

This is in line with what Hanan Malik, Hala Attieh (1998) (11) concluded, that the Fartlek program had a positive effect on raising the level of functional efficiency and motor ability tests, also with the findings of Nasser Abdul Moneim (2004) (20) , Aziza Afifi (2006) (5), where it was concluded that the use of the Fartlek exercises positively influenced the physical physiological variables of the sample under study , And Bastoise Ahmed (1999) confirms that the training of the Fartlek leads to an improvement in tolerance Speed and strength, and thanks to that method, the numbers jumped in the short, medium and long distances (8: 170)

As shown in Table (9) there are differences but not statistically significant in the strength test of the back muscles where the value of "T" calculated less than the value of "T" table at the level of 0.05 and the degree of freedom of (11). Because this variable would need a longer period of existence Significance.

Table (10) shows the improvement rates between the tribal and the barricades in the special abilities (physiological and physiological and for the benefit of remote measurement where the strength of the muscles of the two men the highest rate of improvement was (24.85%), while the strength of the back muscles the lowest rate of improvement (2.16% Other physical abilities

(50 m sprint from low start, 600 m speed, compatibility) achieved an improvement rate of 6.24%, 5.70% and 5.43%. Physiological capacity (pulse before exertion, pulse after exertion) after exerting blood pressure in rest (improvement rates reached (6.98%, 5.77%, 5.56%, 2.84%, (5.72%) respectively, and this is consistent with the findings of Hanan Malik, Hala Attieh (1998)(11), Nasser Abdel Moneim (2004)(20) , Aziza Afifi (2006) (5) , The use of Fartlek exercises improves the physical physiological variables of the sample under study, and confirms that "Dal Monte, Mirri" (2003) that physical activity is accompanied by many physical processes that enable the body to meet the requirements of physical effort, and the regularity of the individual in training to functional changes in vital organs. (10: 236)

(9), (10), the second objective has been achieved and the second hypothesi can be validated, which states that " Fartlek training positively affects some of the special (physical-physiological) capabilities of the research sample.

- Discuss the results of the third hypothese:

Table (11) shows the significance of the differences between the tribal and algebraic measurements at the numerical level and for the remote measurement of the members of the research sample. The two researchers attributed these differences to the effect of the proposed training program using the Fartlek exercises which had a positive effect on the digital level of 400 m / d.

This is in line with the achievement of Majid Mohammed Al-Azzazi (2000) (14) where he found that the training program had a positive impact on the level of skill performance in the research sample, Nasser Abdel-Moneim (2004) (20) Of the sample under study, Aziza Afifi (2006) (5) that the training program using the Fartlek exercises led to the improvement of the digital level of the sample under study, Mahmoud Abdul Salam Faraj (2014) (13) where he found that the proposed training program positively affected in terms of

significance at the level The digital contestants 400 meters sprint.

Table (12) shows the improvement rates between the tribal and the subdivisions in the digital level in favor of the remote measurement of the members of the research sample where the percentage reached (3.87%). The two researchers attributed this percentage to the effect of the training program using the training of the Fartlek which had a positive effect on the digital level of 400 m / sample members.

This is in line with the agreement reached by Majid Mohammed Al-Azzazi (2000) (14), Nasser Abdel Moneim (2004)(20), Aziza Afifi (2006) (5), Mahmoud Abdel Salam Faraj (2014)(17), They concluded that the proposed training program had a positive effect on the level of numerical achievement for 400 meters.

In terms of tables (11) and (12), the third objective has been achieved. the third hypothesis, which states that "the use of the Fartlek training can be positively influenced by the numerical achievement of the 400 m / d race of the research sample, has been achieved.

- Conclusions and Recommendations:

First: Conclusions:

1- The proposed training program using the Fartlek exercises has a positive effect on some physical components (chest width, chest circumference, waist circumference, thigh circumference, thickness of the folds of the body, body mass index) in the research sample except (the width of the shoulders, the circumference of the forearm).

2- The proposed training program using the training of the Fartlek has a positive effect on some special abilities (physical, physiological) in the research sample, except the strength test of the back muscles.

3- The results showed that the best improvement in the physical components was the chest width variable of 6.30%, while the best improvement in the special abilities was the variable strength of the muscles of the two men and reached (24.85%) in the research sample.

4. The proposed program using the Fartlek exercises has a positive effect on the digital achievement of the 400 meter race in the sample.

Second: Recommendations:

1- The use of Fartlek exercises because of their positive impact on some physical components and special abilities (physical and physiological) and the level of digital achievement of the runners.

2 - Use of the Fartlek training to improve the training situation of the runners.

3- The need to conduct such a study on different samples age and gender as well as research variables not addressed by the researcher to identify the rates of contribution of other variables.

4 - Guided quantitative values in the research and function on the physical components and special capabilities (physical and physiological) and digital to conduct similar research in other competitions and other samples.

5 - It is necessary to have a special diet program for this sample during the application of the program.

References:

1- Abu Alaa Abdel Fattah: Mathematical Training, Physiological Basis, Arab Thought House, Cairo, 1997.

2- Abu Alaa Ahmed Abdel-Fattah, Mohamed Sobhy Hassanein: Physiology, Mathematical Morphology and Measurement Methods for Evaluation, Arab Thought House, Cairo, 1997.

3- Ahmed Abdel-Hamid Ali: Effect of developing aerobic capacity according to some physical components to bear the performance of boxing players, Master Thesis, Faculty of Physical Education for Boys, Zagazig University, 2006.

4 -Ali Mohamed Jalaluddin: physiology of physical education and sports activities, I 2, Arab Center for Publishing, Zagazig, 2003.

5- Aziza Mohamed Afifi: Effect of a proposed program

for the training of Vartalk on some physical and physiological variables and the digital level of the race 1500 m / r, Journal of Physical Education Research, Faculty of Physical Education, Benin, Volume 39, No. 72, August 2006.

6 - Bahaa Eddin Salama: Physiology of sport and sports performance, Arab Thought House, Cairo, 2000.

7- Balestros, Alvarez: Principles and principles of education and training in athletics, translation Osman Refaat and Mahmoud Fathi, International Federation of Athletics, Regional Development Center, Cairo, 1991.

8- Bastoise Ahmed: Foundations and theories of sports training, Dar al-Fikr al-Arabi, Cairo, 1999.

9- Brandon,L.J.: Physiological factors asso ciated with middle distance running performance ,sport medicine,vol.,19, No., 8 pp. 34: 46, 1995.

10 -Dal Monte,A. And Mirri G: The functional evaluation of the athlete methods and state of the art,Medicine Della sport,49Turing 1996.

11- Hanan Mohamed Malik, Hala Atteya Mohamed: Effect of a proposed training program using the Varlet method to improve the efficiency of the respiratory system and the kinetic ability of the summer schools, Scientific Conference Research, Faculty of Physical Education for Boys, Helwan University, 1998.

12- Ibrahim Ahmed Salam: The Applied Approach to Measurement in Physical Fitness, Manshah Knowledge Alexandria, 2000.

13- Mahmoud Abdel-Salam Faraj: The Effect of Using Differentiated Training on Some Physical and Physiological Special Capacities and the Digital Level of 400 Meters, Research Journal of Physical Education, Volume 50, Number 96, Part 2, Faculty of Physical Education, Zagazig University, 2014.

14- Majid Mohammed Al-Azzazi: Effect of training program on some physical components and physical efficiency and its relation to the level of skillful performance of football

nautical, Master Thesis, Faculty of Physical Education Boys, Zagazig University, 2000.

15-Mohamed Hassan Allawi, Mohamed Nasr El-Din: tests of motor performance, I 3, Dar al-Fikr al-Arabi, Cairo, 1994.

16- Mohamed Nasr El-Din Radwan: Methods of Measuring Physical Effort in Sports, The Writers' Center, Cairo, 1998.

17- Mohamed Sobhy Hassanein: Effectiveness of Measurement and Evaluation in Physical Education and Sport, 5 th, Dar Al-Fikr Al-Arabi, Cairo, 2003.

18- Mokhtar Ibrahim Shoman: A proposed training program to improve aerobic capacity and some physiological variables of swimming buds, Master Thesis, Faculty of Physical Education in Benha, Zagazig University, 2002.

19-Morehouse L.E,. O Cand Miller : Physical exercise 6th E D. C G, Saint Louis , 2001.

20- Nasser Abdel-Moneim Mohamed: Effect of the use of different methods for the training of Vartalk on some physical and physiological variables and the level of digital achievement of the contestants 800, 1500 M, Master Thesis, Faculty of Physical Education for Boys, Helwan University, 2004.

21-Novvacki.p..: physllogyical and morphology factors associated with successful ferrying performance .journal human tokoy .vol.12.No.3.(2001)

22- Wilmore,J.H and Costilla D.L : Physiology of sport and exercise ,Bang printing ,USA ,1994.

23 - Zaki Mohammed Darwish, Adel Abdulhafiz: Encyclopedia of Athletics in the sprint and competitions, Dar Al Ma'arif, Cairo, 1997.

24- https://en.wikipedia.org/wiki/Fartlek

25- http://jismok.com/bmi-formula/