The effects of special fitness training on morphological variables among junior swimmers in the Leon county School District, Florida

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1/1 Introduction

Physical education is one of the areas that have been affected by the technological development that has occurred in various fields - as an important element for the preparation of the integrated individual, so the modern trend in the field of physiology of physical effort and sports training has included vital body systems, and the study of functional changes resulting from the practice of sports activity of various kinds, and the attempt to reach the individual to the highest possible level in the type of sports activity is closely related to the education of the individual comprehensive balanced education, and this can only be achieved By developing the various abilities and skills of the individual athlete, and therefore the interest of countries has increased significantly in the practice of their people for many types of sports activities for the purpose of acquiring a degree of fitness and integrated vital health.

The sport of swimming is one of the types of water sports, which exploits the water medium to move through it through each of the movements of the arms, legs and trunk in order to improve the efficiency of the human being, not only in terms of physical and skill, but also in terms of psychological, social and even mental, and that this sport beloved by all occupies a prominent position in the world and Olympic sessions as it acquires the largest number of medals except for athletics, and so it has become fashionable that We find some developed countries keen on the eradication of swimming illiteracy keenness to eradicate literacy, and keen on the development of swimming training methods as is the case in a country such as Germany, and swimming is considered as an indispensable basis for the practice of various water sports, such as diving, sailing, gliding, rowing, and swimming signature, and without mastering it is difficult for a person to practice any of the other water sports, Swimming is also characterized as one of the sports activities that can be practiced in different stages of life, and it is not necessary to practice with force and violence that sometimes appear in competitions, but a person can adapt it according to his ability and strength of endurance, making it a means of rest, relaxation and rejuvenation or a means of recreation (8: 5, 22)

The development of records in swimming appeared quickly and clearly

since the scientific theories of various sciences were applied in the field of training, and the various training evaluation methods were applied using heart rates and the percentage of lactic acid concentration in the blood, and selection tests were applied to guide the swimmer towards speed or endurance distances depending on the proportion of fast and slow muscle fibers, as well as various training methods were developed to deal with different body systems in the direction of the physiological performance requirements of the race, and it was also possible to use means of hospitalization. Diverse combined parallel with the development of training load, and this development in the level of numbers depends mainly on the science of sports physiology, and theories of adaptation and the coach works mainly to achieve the process of adaptation of the body systems through a successful training program and a sound plan to enable the swimmer to perform the highest possible level.

It also indicates that the relationship between physiology and training is a close relationship because physiology is the science that explains and describes changes and training is the motor performance that causes these changes in order to improve and develop them to reach the adaptation process If the training process does not take place within the framework of a proper understanding of the physiology of sport will not achieve the required adaptation and therefore we will not get progress at the level that we aim toe Based on the above, the coach must know that temporary physiological changes "responses" or the development of these changes and improvement, which is adaptation, vary from one sport to another due to the different performance requirements in each of them, as they also differ in swimming from one distance to another and from the speed of performance to the speed of performance of another, fast swimming for short distances leads to certain changes that differ from them when performing swimming for longer distances and at a lower speed, and therefore the training and preparation processes must It aims to bring about adaptation processes with the required quality of distance and specialization for which the swimmer prepares, so training in light of the nature of physiological changes and their identification is the shortest way to achieve training goals.(1:69,71, 72)

Pulse rate is used as a physiological measure to determine the recovery period after exertion, and heart rate recovery after exertion is the best indicator of whether an individual is physiologically ready to perform the next work or not. (44:111)

Cardiac impulse increases directly during training as the relationship between cardiac thrust and the maximum percentage of oxygen intake is necessary to provide the necessary materials for energy production and the cardiac thrust is increased by the size of the beat and heart rate. (84:173)

Search problem

Therefore, through the researcher's interest, reading and familiarization with previous studies and research, it was found that it sheds great light on the players of first-class clubs without paying attention to sports practitioners in youth centers, especially those in the preparatory education stage or those outside the education sector , which raised the ire of the researcher in proposing a program "educational - training "Through which he tries to find out the extent of the impact of exercise (the proposed "educational - training" program) on physical efficiency and some physiological variables that occur in the body, and the digital level of crawling swimming on the abdomen, and where the description of the interpretation of functional changes resulting from the performance of physical activity or its repetition is important in understanding the semantics of the natural laws on which these changes are based and then and as a result They can be controlled and increased in effectiveness to improve the level of performance of the individual, both physically and physiologically.

1/4 Research Objective

Through the application of research procedures, this research aims to :

1.4.1 Designing a proposed "educational - training" program for young swimmers.

1/4/2 Identify the impact of the proposed program on physical efficiency and some physiological variables among emerging swimmers.

1/4/3 Study the impact of the proposed program practice on improving the digital level of freestyle for a distance of (25 meters - 50 meters - 100 meters) among young swimmers.

1.4.4 Identify the relationship between general physical efficiency and physiological variables under research.

1/5 Research hypotheses

In order to achieve the objectives of the research , the researcher developed the following hypotheses:

1.5.1 There are statistically significant differences between pre-measurement and post-measurement as a result of the impact of the implementation of the proposed program on the physical

efficiency in favor of post-measurement.

1/5/2 There are statistically significant differences between the pre-measurement and the post-measurement of the proposed program in the physiological variables under research (during rest and immediately after exertion) among the sample members in favor of the post-measurement.

1/5/3 There are statistically significant differences between the numerical level in freestyle swimming for a distance of (25 meters - 50 meters - 100 meters) before and after the application of the proposed program and in favor of telemetry.

1.5.4 There is an association between the measurement of physical efficiency and the physiological variables under consideration.

1/6 Terminology

1/6/1 Vital Capacity

It is the amount of air that can be exhaled from the lungs during maximum exhalation after maximum inhalation. (34: 139)

Mohammed **Hassan Allawi and Abu Ela Ahmed Abdel Fattah (2000) explain** that the vital capacity of the lungs is equal to the sum of the volumes of "the reserve of inspiration and air inhalation normal and reserve exhalation", and this capacity is the largest volume of air that a person can get out with taking the maximum inhalation, and that there are many factors that have an impact on the vital capacity of the lungs contrary to the measurements of the body, such as body position, strength of breathing muscles, and the property of stretching the chest cavity.(47:281)

Search Procedures

Research Methodology

The researcher used the experimental method by designing the pre- and post-measurement for one experimental group to suit the nature of the research.

3/2Research Sample

The research sample was selected by deliberate random method for male junior swimmers , registered and representing a age stage of 11-12 years .

3.2.1 Number of sample members

The sample size reached (30) emerging, where (10) individuals lagged behind during the application of the program, so the sample size became (20) emerging.

3.3 Data collection methods and tools

To collect data and information related to the subject of study, the researcher used the following means and tools:

3.3.1 Data sources and associated information

The researcher used the data and information available through research and studies related to the subject of the research, as well as books and scientific references related to the subject of research and similar to it.

3.3.2 Personal interview

The researcher designed measurement forms for research variables as well as the educational and training program through several personal interviews with experts in activities, coaches, experts in measurements and tests, training experts and sports physiology, and the following conditions were taken into account in the selection of the expert: -

- Hold a PhD degree in the academic field.
- To be interested in the training process, evaluation and sports physiology.
- To have field experience in the field.
- To be a faculty member in one of the faculties of physical education.

Names of experts in Annex No. (13).

3.3.3 Instruments, devices and tests used in measurements

In light of the objectives of the research and within the framework of the variables included in it, the researcher conducted the following measurements and tests in collecting data, which are as follows:

The steps of implementing the research are divided into two stages: -

3/6/1 The first stage, which is represented in: -

3/6/1/1 Selection of research sample

And identify them according to the objectives set for the research and according to the conditions and description of the sample that was previously clarified in the sample members.

3**/6/1/1/1 Characteristics of the research sample**

In order to ensure the researcher homogeneity of the members of the research sample, the sample members have undergone a pre-test for the functional and physical variables under study, as this is evident through the following table:

Table No. (1)

The arithmetic mean, standard deviation, coefficient of variation and torsion of the functional - and physical variables of the members of the research sample before the "educational training" program 0.08

variable	ا			
	Average	Average	Average	Average
Age in years	11.24	0.66	5.75	-0.37
Height in cm	146.16	6.50	4.44	0.18
Weight in kilograms	42.95	9.94	23.14	0.30
The external surface area of the body in square metres	1.35	0.13	9.94	0.33
Digital level for a distance of 25 meters in the belly crawl method per second	22.30	11.89	18.21	- 0.11
Digital level for 50 meters in the belly crawl method per second	40.56	9.18	15.50	- 0.81
Digital level for 100 meters in the belly crawl method per minute	1.13.9	11.90	18.54	- 0.12
The vital capacity of the lungs in litres	2.38	0.45	18.99	- 0.16
Bio-efficiency l/m2	1.76	0.23	13.25	- 0.09
Resting pulse in 10 seconds	14.50	1.25	6.76	- 0.04
Pulse after exertion within 10 seconds	27.75	0.75	2.44	0.33
Recovery time for pulse per minute	5.75	0.45	7.83	-0.56
Systolic pressure at rest mmHg	102	9	8.82	-0.33
Resting diastolic pressure mmHg	66.50	6.50	9.77	Variable
Pre-measurement	123.50	Arithmetic mean	Standard deviation	Coefficient of variative
Convolution		11.24	0.66	5.75
Age per year	-0.37	146.16	6.50	4.44
Height in cm	0.18	42.95	9.94	23.14
Weight in kg	0.30	1.35	0.13	9.94
Body surface area in square meters	0.33	22.30	11.89	18.21
Digital level for 25 meters by crawling on the abdomen per second	- 0.11	40.56	9.18	15.50
Digital level for 50 meters by belly crawl per second	- 0.81	1.13.9	11.90	18.54
Digital level for 100 meters by crawling on the abdomen per minute	- 0.12	2.38	0.45	18.99
Vital capacity of lungs in liters	- 0.16لتر ق/	1.76	0.23	13.25
Bioefficiency l/m2	- 0.09	14.50	1.25	6.76
Pulse at rest within 10 seconds	- 0.04	27.75	0.75	2.44

It is clear from the previous table that the values of the torsion coefficients have been limited between (-0.556 and 0.644), and these values are confined between (-3 and +3), which indicates the homogeneity of the sample members in these variables.

3/6/1/2 Program Design Steps

Which is illustrated through: -

3.6.1.2.1 Foundations of Program Development

- Suitability of the program for the common age stage in research.

-Using some programs developed in that field.

-Availability of the security and safety factor.

-Comprehensiveness and balance of development of body parts so that the focus is not on one part without the other.

-Continuity and regularity so as not to lose the effect of previous workouts.

-Start with low intensity and then progress gradually depending on the degree of adaptation.

-All the contents of the training module should contribute to achieving its objectives, including warm-up and cool-up.

-The arrangement of contents in the unit helps to achieve the best possible productivity to achieve its goals.

-Regularity of the rhythm speed during the implementation of the unit according to the prescribed intensity.

-Informing the individual of progress in his level is one of the most important factors for increasing motivation.

-The flexibility of the program to incorporate some elements of the beloved boredom and monotonous self.

3.6.2.2.1 Pre-measurement

The pre-measurement of the research sample was conducted in the period from Saturday, 27/5/2008 until Thursday, 31/5/2008 for the following research variables:

3.6.2.2.2 Programme implementation

The proposed program for the research sample was implemented during the period from Sunday 1/6/2008 until Thursday, 14/8/2008 according to the program "educational - training" Annex No. (14)

3.6.2.2.3 Telemetry

The dimensional measurement of the research sample was conducted in the period from Saturday, 16/8/2008 until Thursday, 21/8/2008 for the following research variables:

3/8 Nature of statistical processing

The researcher unloaded the data for each laboratory and the data was processed statistically and the researcher used the following statistical treatments: -

3.8.1 Arithmetic mean (Q).

3.8.1 Standard deviation (p).

3.8.1 Coefficient of variation.

4/1 Display Results

This chapter deals with a presentation of the results that could be reached through the statistical treatment of the study data and in the light of the measurements used, and to facilitate the method of presentation, the results have been presented according to the order of objectives as follows: -

Table No. (2)

The arithmetic mean, standard deviation, coefficient of variation, value (T) to indicate differences, average differences, and percentage improvement between the pre- and post-measurement of the variables of the proposed "educational - training" program

0.33	Recovery period of pulse per minute			5.75			0.45	7.83) المحسوبة	-0.56
	102	9	8.82	-0.33	Resting diastolic pressure mmHg	66.50			
Systolic pressure after exertion mmHg	123.50	8.50	6.88	-0.18	Diastolic pressure after exertion mmHg	61.50	6.95	11.30*	0.22
Resting stroke	55.65	2.86	4.05	- 0.12	The volume of the blow after the effort is milliliters	71.55	7.06	8.16*	0.64
The amount of cardiac thrust at rest l / s	4.84	0.72	9.13	- 0.35	The amount of cardiac thrust after exertion l / s	11.91	1.45	9.05*	0.46
Index (index) of the heart at rest l/s/m2	3.59	0.94	15.76	-0.10	Index (index) of the heart after exertion l/s/m2	8.83	1.44	12	- 0.02
Recovery period for heart index (index) per minute	5.80	0.48	8.28	- 0.42	Maximum absolute oxygen consumption	1.515	230.43	15.20	0.09
Absolute general physical efficiency mL/s	199.61	5.99	3	0.37	Relative overall physical efficiency mL/kg/s	4.65	0.74	15.96*	0.0848
Pulse after exertion within 10 seconds	27.75	0.75	2.44	26.10	0.64	2.20	- 1.65	11*	- 5.94
Pulse recovery recovery time per minute	5.75	0.45	7.83	4.75	0.38	7.90	- 1	13.78*	- 17.39
Systolic pressure at rest, mmHg	102	9	8.82	102	6.80	6.42	0.00	0.00	0.00

0.33	Recovery period of pulse per minute			5.75			0.45	7.83) المحسوبة	-0.56
	102	9	8.82	-0.33	Resting diastolic pressure mmHg	66.50			
Diastolic pressure at rest, mmHg	66.50	6.50	9.77	63	6.50	10.08	- 3.50	2.18*	Variable
Pre-measurement	Telemetry	Average spreads	Calculated	Percentage improvement	6.25	Arithmetic mean	Standard deviation	Coefficient of variation 3.63*	Arithmetic mean.67

Standard deviation	Coefficient of variation			القياس البعدي			فروق المتوسطات	قيمة (ت) المحسوبة	Digital level for 25 meters by crawling on the abdomen per second
	11.89	18.21	20.10	10.30	14.48	-2.2			
الانبساطي بعد المجهود40.56 مم زئبق	9.18	15.50	38.49	7.50	11.82	- 2.07	6.12	5.10	Digital level for 100 meters by crawling on the abdomen per minute
الضربة اثناء الراحة1.13.9 ملليلتر	11.90	18.54	1.10.6	8.64	16.82	- 0.3.3	2.19	27.4	Vital capacity of lungs in liters
الضربة بعد المجهود2.38 ملليلتر	0.45	18.99	3.35	0.49	14.48	0.97	- 24.17*	40.76	Bioefficiency l/m2
1.76	0.23	13.25	2.48	0.25	10.15	0.73	- 22.27*	41.39	Pulse at rest within 10 seconds
14.50	1.25	6.76	12.40	1.42	8.66	- 2.10	11	- 14.	Pulse after exertion within 10 seconds
27	0.75	2.44	26	0.64	2.20	- 1.65	11	- 5.	Recovery period of pulse per minute
5.75	0.45	7.83	4.75	0.38	7.90	- 1	13.78	- 17.39	Resting systolic pressure mmHg
102	9	8.82	102	6.80	6.42	0.00	0.00	0.00	Resting diastolic pressure mmHg
الأقصى لاستهلاك66.50 الأكسجين المطلق لتر/ق	6.50	9.77	63	6.50	10.08	- 3.50	2.18	- 3.01	Systolic pressure after exertion mmHg
البدنية العامة المطلقة123.50 ملليلتر/ق	8.50	6.88	130.50	6.25	4.55	7	-	5	9.40
الكفاءة البدنية العامة النسبية ملليلتر/كجم /ق	4.65	Variable	Pre-measurement	Telemetry	Average spreads	Calculated	Percentage improvement	- 14.42*	Arithmetic mean

* The value of (T) grandfatherand guardian 2.09 at a significant level of 0.05

It is clear from Table (2) that:

4/1/1/1 There is a statistically significant difference between the pre-measurement and the post-measurement of the training program in the following variables:

lungs vital capacity - bio efficiency pulse at rest within 10s - pulse

immediately after exertion within 10s recovery period of pulse - diastolic blood pressure at rest - systolic blood pressure after exertion - diastolic blood pressure after exertion - volume of stroke during rest - volume of Stroke after exertion - the amount of cardiac thrust at rest - the amount of cardiac thrust after exertion - index (index) heart at rest - index (index) heart after exertion - recovery period of the index (index) of the heart - maximum absolute oxygen consumption absolute general physical efficiency relative general physical efficiency)

4/1/1/2 There is no statistically significant difference between the pre-measurement and the post-measurement of the training program in the following variables:

Blood pressure contraction at rest.

4.1.2 Correlation coefficient between general physical competence and physiological variables under consideration before and after the proposed "educational - training" program.

Through the correlation tables that illustrate the relationship between general physical efficiency and physiological variables under research before and after the proposed program, where the existence of this relationship means that if one of the two variables changes, the other variable tends in the same direction or in the opposite direction, as if this change in one of the two variables is followed by a change in increase or decrease in the other variable in the same direction, we say that the correlation between the two variables is direct (positive), but if the change In the two variables in two opposite directions, meaning that the increase of one of them leads to the lack of the other and the lack of one leads to the increase of the other, and then the correlation between the two variables becomes negative (inverse), and we find that the value of the correlation coefficient ranges between ±1, which is an absolute value that is not expressed in units of measurement, and the correlation coefficient cannot decrease from -1 nor exceed +1 and if the value of the correlation coefficient ranges between (zero, 1), this indicates the existence of a direct correlation (positive) If its value is confined between (zero, -1), this indicates the existence of an inverse correlation (negative), and if the value of the correlation coefficient = +1, the correlation is completely direct, but if its value = -1, the correlation is completely inverse, and if its value = zero, this means that there is no correlation between the two variables, and the closer its value is to the correct one, the stronger the correlation is, and the farther its value from the correct one, the weaker the correlation is.

Tables No. (3)

Correlation coefficient between general physical competence and physiological "variables under consideration before and after the proposed "educational - training program- 0.90

Standard deviation	Coefficient of variation	Arithmetic mean	Standard deviation	Coefficient of variation
	0.06	- 0.38	Diastolic pressure	61.50
6.95	11.30	54.50	6.40	11.74
- 7	4.27*	- 11.38	Resting strike	55.65
2.86	4.05	66.55	4.25	5.70
10.90	- 4.03*	19.59	The volume	71.55
7.06	8.16	85.50	6.60	6.57
13.95	- 7.95*	16.12	The amount of cardiac thrust at rest l / s	4.84
0.72	9.13	4.95	0.66	8.94
0.11	3.12*	2.27	The amount of cardiac thrust after exertion l / s	11.91
1.45أثناء الراحة خلال 10ثواني	9.05	13.39	1.25	7.37
1.48	- 4.72*	12.43	Index (index) of the heart at rest liters / s / m2	3.59
0.94 استعادة الشفاء للنبض بالدقيقة	15.76	3.67	0.93	16.82
- 0.08إثناء الراحة مم زئبق	2.89*	- 2.23	Index (index) of the heart after exertion l/s/m2	8.83
1.44أثناء الراحة مم زئبق	12	9.92	1.44	10.96
1.09	- 4.54*	12.34	Recovery period of a heart index per minute	5.80
0.48	8.28	4.75	0.38	7.90
- 1.05الضربة أثناء الراحة ملليلتر	11.92*	- 18.10	Maximum	1.515
2.30الضربةبعد المجهود ملليلتر	8.20	1.704	2.62	8.39
1.88	8.52*	12.43	Absolute general physical	199.61
5.99	3	218.39	6.94	3.18
18.792أثناء الراحة لتر/ق/م	- 15.52*	9.40	Relative overall physical efficiency mL/kg/s	4.65
0.74	15.96	5.08	0.78	15.32
0.43	- 14.42*	9.25	- 0.88	- 0.14
الحد الأقصى لاستهلاك الأكسجين المطلق لتر / ق	0.15	- 0.90	0.27	- 0.90

4/1/3 In the light of the results of the statistical treatments, the researcher concluded from the following results:-

4.1.3.1 The first result is related to the second objective of the research, which is "to identify the effect of the proposed "educational-training" program on physical efficiency and some physiological variables among young swimmers..

The results indicated that there are statistically significant differences at a significant level (0.5) between the pre-measurement and the post-measurement of general physical efficiency (relative and absolute) as a result of the impact of the implementation of the "educational training program" in favor of the post measurement, **and this is what achieves the first hypothesis of the research.**

4.1.3.2 The second result is related to the second objective of the research, which is "to identify the effect of the proposed "educational - training" program on physical efficiency and some physiological variables among young swimmers.

The results indicated that there are statistically significant differences at a significant level (0.5) between the pre-measurement and the post-measurement of the proposed "educational - training" program in the following physiological variables (at rest and immediately after exertion) "vital capacity of the lungs - bio efficiency - pulse at rest during 10 s pulse immediately after exertion during 10 s - Recovery period of the pulse Resting diastolic blood pressure Systolic blood pressure after exertion Diastolic blood pressure after exertion - Pulse volume at rest - Pulse volume after exertion - - Amount of cardiac thrust at rest - The amount of cardiac impulse after exertion - Index (index) Heart at rest - Cardiac index after exertion - recovery period of cardiac index - maximum absolute oxygen consumption " in favor of telemetry. This is what achieves the second hypothesis of the research.

The results also indicated that there were no statistically significant differences at a significant level (0.5) between the pre-measurement and the post-measurement of the proposed "educational - training" program in the following physiological variables (during rest and immediately after exertion) " Blood pressure contraction at rest" .

4/1/3/3 The third result with regard to the third objective of the research, which is "a study of the impact of the proposed program practice on improving the digital level of freestyle swimming for a distance of (25 meters

50 meters - 100 meters) among young swimmers."

The results indicated that there are statistically significant differences at a significant level (0.5) between the pre-measurement and the post-measurement of the digital level in freestyle swimming for a distance of (25 meters - 50 meters - 100 meters) among emerging swimmers as a result of the impact of the implementation of the proposed "educational - training" program in favor of the post-measurement, and this is what achieves the third hypothesis of the research.

4.1.3.4 The fourth result is related to the fourth objective, which is "to identify the relationship between general physical efficiency and physiological variables under investigation."

4/1/3/4/1 We also conclude from the previous correlation tables of general physical efficiency and physiological variables under research before and after the proposed "educational - training" program as follows:

The most important strong relationships linking general physical competence and the physiological variables under research, whose degrees range from an excellent level (0.7), whether directly or inversely, to a complete level (1), whether direct or reverse, were as follows:

4.1.3.4.1.1 Absolute general physical competence is inversely proportional to

4/1/3/4/1/1/1/1 Resting pulse rate within 10s (almost completely reversed)

4/1/3/4/1/1/2 Pulse recovery period (excellent reverse)

4/1/3/4/1/1/3 Recovery period for cardiac index (indicator) (excellent reverse)

4.1.3.4.1.2 General relative physical efficiency is inversely proportional to

4/1/3/4/1/2/1 Weight (Reverse Near-Perfect)

4/1/3/4/1/2/2 Outer surface area of the body (almost perfect reverse)

4/1/3/4/1/2/3 Maximum absolute oxygen consumption (almost completely reversed)

4/2Discussion of results

4.2.1 First and second results

4.2.1.1 The clear improvement in general physical efficiency (relative and absolute) and in the following physiological variables (at rest and immediately after exertion) (vital capacity of the lungs - vital efficiency - pulse at rest within 10s - pulse immediately after exertion during 10s - recovery period of pulse - diastolic blood pressure at rest - systolic blood pressure after exertion - Diastolic blood pressure after exertion - Pulse volume

at rest - Pulse volume after exertion - Amount of cardiac thrust at rest - Amount of cardiac push after exertion - Index (index) Heart at rest - Index (index) of the heart after exertion - Recovery period of the index (index) of the heart - Maximum absolute oxygen consumption) as a result of the impact of the implementation of the "educational - training" program in favor of telemetry.

This is due to:

That if the individual performed an exercise, whether physical, skill or strategic, this performance will affect a certain image and degree on the various functional organs of his body, and can describe the effects of the exercise performed by a burden or physical and nervous load on the organs of the individual's body, and proportional to the degree of effects directly on the functional organs with the intensity of the exercise executed. (58: 39)

With the improvement of the functional condition, the player can perform more work with the economy of energy exerted, and this indicates the improvement of the physical efficiency of the player, which makes the player can perform his work well. (32: 46)

Lippincott Williams & Wilkins **(2006) suggest** that training is a physical activity that takes place in a repetitive manner at increasing intervals for several purposes, including improving fitness, physical efficiency, and physical health in leisure time. (76:3)

Physical efficiency is also a high training condition that depends on the biological and physiological adaptation of the internal swimmer's organs under the influence of training, which appears in the high level of progress, and the efficiency of the devices is considered in its entirety linked to physical efficiency, and experiments have shown that physical efficiency is associated with a high level of increased efficiency of the circulatory and respiratory systems. (66 :319)

5/1 Conclusions

We conclude from the previous presentation of the results and their interpretation as follows:

5/1/1 There are statistically significant differences at the level of significant (0.05) between the pre-measurement and the post-measurement of general physical efficiency (relative and absolute) as a result of the impact of the implementation of the program "educational - training" proposed in favor of the post-measurement.

5/1/2 There are statistically significant differences at the level of significant (0.05) between the pre-measurement and the post-measurement of the proposed "educational - training" program in the following physiological

variables (at rest and immediately after exertion) (vital capacity of the lungs vital efficiency - pulse at rest during 10 s pulse immediately after exertion during 10 s - recovery period of pulse Resting diastolic blood pressure systolic blood pressure after exertion diastolic blood pressure after exertion - Resting pulse volume - Pulse volume after exertion - Amount of cardiac thrust at rest - The amount of cardiac impulse after exertion - Index (index) Heart at rest - Guide (index) Heart after exertion - Recovery period of cardiac index (index) - maximum absolute oxygen consumption) in favor of telemetry.

5.1.3 There were no statistically significant differences at the level of (0.05) between the pre-measurement and the post-measurement of the "educational - training" program in the following physiological variables (during rest and immediately after exertion) (Blood pressure contraction at rest) .

5/1/4 There are statistically significant differences at a significant level (0.05) between the pre-measurement and the measurement of the digital level in freestyle swimming for a distance of (25 meters - 50 meters - 100 meters) among young swimmers, as a result of the impact of the implementation of the proposed "educational - training" program in favor of the post-measurement.

5.1.5 There is a strong correlation between general physical efficiency and some physiological variables under research, this degree of association ranges from 0.7 to the correct one and these variables were (pulse rate at rest within 10s - pulse rate immediately after exertion during 10s - systolic blood pressure after exertion - maximum absolute oxygen consumption - weight - the area of the outer surface of the body- Heart index after exertion - Healing period of pulse recovery - Recovery period of heart index (index).

5.2 Recommendations

5/2/1 Conducting other similar studies on the application of the "educational - training" program at different ages to compare their results with the results reached by the researcher.

5/2/2 The use of the proposed "educational - training" program to improve the level of performance in swimming and to raise the physical efficiency and function of junior swimming and to improve the digital level for a distance of (25 meters - 50 meters - 100 meters) by crawling on the abdomen.

5.2.3 The researcher recommends the need to pay attention to the development of programs that improve

the level of basic motor skills of swimming among young people at the level of different age stages.

5/2/4 The need to pay attention to the dissemination of swimming and swimming pools in the centers of ShebaB villages, where it is considered one of the most important recreational activities in addition to the acquisition of practitioners of public health by raising physical and functional efficiency and avoiding chronic diseases such as schistosomiasis.

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