

The effect of a proposed training program on some special physical variables for taekwondo juniors

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Introduction and search problem:

. The era in which we live is the age of science and technology, so countries in the field of sports look to the higher levels, scientific research and its applications are the effective factor to achieve the best results, where this scientific research contributed to improving physical performance through training programs regulated for the purpose of upgrading the physical, maharie and linear level, which is what the workers in the field of training seek, through the preparation of the player physically, especially in the sport of taekwondo.

Abu Ala Abdel Fattah (1997) states that sports training is a complex process that requires scientific technology and field practice, not just one of them, and that relying on field experience without reference to science violates one of the basic rules of the coach's success and makes him a coach who lacks a lot no matter what his practical experience. (1:1)

Fathi Ahmed Al-Saqqaf (2013) points out that sports training is an educational process subject to scientific principles and principles and aims mainly to prepare the individual to achieve the highest level of sports in a certain type of sports activities and since the training process and the development of training programs are based on a thorough scientific and psychological study according to the requirements of different levels of achievement, whether digital or skilled, where the subject of training programs developed by the coach and the method of application, which is mainly related to the effectiveness of the coach and the player as well as the effectiveness of the player in the case The psychology associated with the sports training

process which is actually a real appreciation of the mental and scientific abilities of the coach and the player. (66:11)

Mohammed Tawfiq Al-Wolili (1995) adds that sports training is an indication of the prosperity of nations and peoples through the results achieved by the players during international competitions, and this leads us to the need to recognize the presence of a qualified coach in practice and scientific related to the sports activity practiced. (:1342:)

Yacoub Fahad al-Obaidi (1990) believes that the most important feature of our time is one of the proven facts that dealing with science and technology has become a process that enjoys the attention of all peoples on the different degrees of growth, and science and technology is the basis of the most effective management to achieve the goals of countries and their civilized progress as most developed countries in the field of sports make the most of their interests in the technological field while developing countries focus all their interests on determining how and how technology can Make a more effective contribution than others. (19 :32)

Sherif Mohammed Ghoneimi (1999) adds that the use of electronic devices in the Arab Republic of Egypt and its keeping pace with the global civilizational progress in the field of sports and the rapid development of the language of computers as well as ready-made programs in addition to the start of the presence of individuals specialized in the preparation of programs and operation has allowed the beginning of full use of all the features of electronic devices. (32:4)

Ahmed Saeed Zahran (2015) refers to taekwondo sport from the sports activities that need special physical requirements that distinguish it from other sports activities, and these requirements are usually reflected in the physical specifications to be available in the practitioners of this sport, as the availability of such specifications to practitioners can give a greater opportunity to absorb the skills and arts of the game, divided training taekwondo that has two to two championships The first is (Pomza), and the second is the art of engagement (Kiroje), which is the art that he uses in self-defense between two people and has several types of croji used in the games, which is the only type that holds official and international championships in which both players wear the protectives of the game during the game where each player tries to beat the other player by directing kicks using foot in the chest area within the limits of the international law of the game, which requires the presence of a number of From the rulers to apply the law within the limits of the allowable place and the time allocated to it. (56:15)

There is no doubt that many coaches in taekwondo face many problems when preparing the taekwondo player for kiroji, where the researcher noted through her experiences in the field of taekwondo sport and obtaining the black belt and through the many observations of taekwondo tournaments there is a clear lack of points calculation due to the weakness and lack of ability of players to pay technical kicks (skills) and especially allowing it a negative impact on the form of skills and the way they perform, and proper planning to develop the skills of the sport Taekwondo requires the development of physical strengths such as balance and muscle strength in order to reach the desired goal. (18:5)

Search objectives:

The research aims to design a proposed training program using electronic devices (headguard, chest protector, mat, sandbag) to find out:

1. Its effect on some of the special physical variables of (maximum strength of the muscles of the legs, the maximum strength of the back muscles, the muscle capacity of the two men, agility, speed, compatibility, muscular endurance) on taekwondo youth.
2. Its impact on some of the skill variables represented by (Ab Chagi, Bek Chagi, Abtulio Chagi) on taekwondo juniors.
3. The rate of improvement of physical and maharia variables on taekwondo juniors.

Search duties:

1. There are statistically significant differences between the tribal and remote measurements of the experimental research group in the level of special physical variables in favor of the distance measurement of the taekwondo originator.
2. There are statistically significant differences between the tribal and remote measurements of the experimental research group in the level of skill variables in favor of the lateral measurement of the taekwondo originator.
3. There are differences in the rate of improvement of some special physical variables and the maharia in favor of the remote measurement of taekwondo builders.

Search terms:

Electronic equipment in taekwondo electronic equipment

"These are modern training and performance devices in accordance with the amendments of the Taekwondo (Croji) Sport Act, which require appropriate technical and physical performance for calculated kicks." (*)

Technology technology

"It is the practical application of scientific discoveries and inventions, especially those that are concerned with scientific research." (26)

Sindbaj (Al-Shass) :

"It is a training tool that takes the natural shape of the human body in order to make it easier for the player to perform such as performance in matches. (*)

Hugo (chest protector):

"It is a taekwondo tool worn by the player to protect the torso from injuries during training or matches. (*)

The met:

"It is a hand-held taekwondo tool used to teach and train skills. (*)

Taekwondo Taekwondo Taekwondo

Ahmed Zahran (2015) states that "the word Taeondo is divided into three sections (tae) and means foot, universe (kwon) and means fist, do means method or fighting spirit and the meaning of the word is the art of using hand and foot in self-defense in a combat spirit." (9:4)

Taekwondo juniors:

The player is generally between the ages of 6 and 16, taking into account the individual differences that distinguish each other. (*)

Physical abilities:

Are the physiological physical elements or qualities that are born with man and grow with his or her growth, depending on the nature, work and lifestyle of the individual (2:36) .

Search plan and procedures:

Research approach:

The researcher used the experimental approach of one group to suit the nature of the research..

Community and sample research:

All 28 young Taekwondo players from Nile Under-14s who are enrolled in the Egyptian Taekwondo Federation in the 2020-2021 season. **have been excluded.**

The research sample was selected in the deliberate manner of the 14 players of Nile Club in Cairo Governorate under the age of 14, where the base sample of the research (10) young people representing the experimental research group, while the survey sample (8) originated from the research community and outside the basic research sample.

Search tools:

The researchers identified the tools used in the research and the selection of these tools took into account the conditions

Next:

**Be effective in measuring the specific aspects of the research.
To have scientific transactions in them honestly, consistently and objectively.**

First: Hardware and tools:

- A restometer to measure length (cm).
- Medical balance to measure weight (kg).
- Stopwatch.
- Medical balls 3 kg.
- Training tools (cones, hoops, ladder training, etc.)
- Resistance tensions (rubber assat) that are proportional to the age group used in the research.
- A measuring tape.
- Dynamometer to measure the strength of the muscles of the legs and back.

The researchers ascertained the moderate distribution of members of the experimental and controlled groups in light of the following variables: growth rates "age, height, weight", physical variables in question "characteristic strength of speed, maximum strength, transitional speed, agility, flexibility, compatibility, balance", (1, 2) explain this.

Table (1)
The differences between the average score of the two groups
Distinctive and non-distinctive in tests to find the factors of honesty

Variables	Unit of measurement	A special collection N=4		Unmarked collection N=4		Z value	Significance	
		Average grades	Total ranks	Average grades	Total ranks			
Physical variables	The maximum strength of the muscles of the legs	kg	6.50	26.00	2.50	10.00	2.38	0.01
	The shear strength of the back muscles	kg	6.50	26.00	2.50	10.00	2.32	0.02
	Muscular ability of the two men	meter	6.50	26.00	2.50	10.00	2.30	0.02
	Speed	second	2.50	10.00	6.50	26.00	2.30	0.02
	Agility	second	2.50	10.00	6.50	26.00	2.31	0.02
	Compatibility	second	2.50	10.00	6.50	26.00	2.30	0.02
	Muscle endurance	reiteration	6.50	26.00	2.50	10.00	2.36	0.02

Table value (Z) at a moral level (0.05) = 1.9

Table 1 shows:

There are statistically significant differences between the characteristic and non-characteristic group in the physical and mahariya variables under consideration in favor of the characteristic group at the level of moral significance (0.05), which gives a direct indication of the sincerity of these tests.

Table (2)
Application-reapply transactions for tests in question

(N=8)

Variables	unit scaling	First app		Application 2		Value (t)	
		Medium	Deviation	medium	Deviation		
Physical variables	The maximum strength of the muscles of the legs	kg	64.75	3.45	65.00	3.54	0.992
	The maximum power of the arms.	reiteration	1.37	0.74	1.50	0.53	0.898
	Muscular ability of the two men	meter	1.24	0.05	1.26	0.04	0.965
	Speed	second	6.14	0.31	6.12	0.31	0.998
	Agility	second	5.45	0.28	5.43	0.29	0.999
	Compatibility	second	7.70	0.38	7.61	0.38	0.971
	Muscle endurance	reiteration	16.00	2.00	16.37	1.84	0.967

Table value (t) at level (0.05) = 0.829

Table 2 shows the following:

There is a statistically significant correlation between application and reapplying in the physical and skilled variables under consideration as the calculated r value is greater than the table value (r) at a moral level of 0.05, indicating the stability of these tests.

Success and excellence in taekwondo depends on several elements and components, and one of the most important of these elements is that the player reaches the best physical levels

Parity for two research measurements:

The researchers found parity between the tribal and distance measurements in light of the following variables: the physical variables under consideration "speed, agility, compatibility, muscular endurance," and table 3 illustrates this.

Table (3)
Percentage of improvement rates between the two measurements
Tribal and remote physical measurement research sample under consideration
(N=10)

Physical variables	Unit of measurement	Tribal measurement		Telemetry		The difference between the two averages	Percentage improvement%
		medium	Deviation	medium	Deviation		
The maximum strength of the muscles of the legs	kg	65.00	4.80	74.00	4.47	9.00	13.84%
The shear strength of the back muscles	kg	53.20	2.29	62.50	2.06	9.30	17.48%
Muscular ability of the two men	meter	1.25	0.04	1.58	0.03	0.33	26.40%
Speed	second	6.17	0.29	5.13	0.13	- 1.04	16.85%
Agility	second	5.45	0.27	4.35	0.19	- 1.10	20.18%
Compatibility	second	8.28	0.45	7.06	0.54	- 1.22	14.73%
Muscle endurance	reiteration	16.20	1.81	24.60	1.34	8.40	51.85%

Table 3 shows:

The percentage of improvement rates between the tribal and remote measurements of the physical measurement sample in question ranged from 51.85% as the largest value, to 13.84% as the smallest value.

Second: Tests:

Physical variable tests:

The researchers reached tests of physical abilities through theoretical readings and specialized scientific references: "Essameddine Abdul Khaleq" (2001) (7), "Ali Fahmy Al-Beek" (2004) (8) and "Mohammed Hassan Allawi" (2004) 2000(12), "Mufti Ibrahim Hammad" (2005) (13) and its own physical abilities and physical tests were identified and through which the researchers reached the physical abilities associated with this skill, which are:

Muscle ability. Maximum power.

Maximum speed. Agility.

Compatibility.

Which can be measured by the following tests:

1 Muscle ability: vertical jump test of stability and "centimeter measurement unit."

2 Maximum strength: testing the strength of the muscles of the two legs and the "c.E.O." unit.

3 Maximum speed: testing the enemy 30 m from the beginning of the moving "second unit of measurement."

4 Agility: Shuttle run test 4×9 m and second unit of measurement.

Compatibility: Testing of numbered circuits and the second unit of measurement.

The selection of these tests has taken into account the widespread use of these tests in many scientific studies and researches, ensuring the availability of high scientific transactions.

Third: The proposed training program:

The purpose of this research is to implement a proposed training program and its impact on some of the special physical variables of the taekwondo builder that enables researchers to build the program as follows:

The foundations of the development of the program:

Taking into account the individual differences between the members of the search sample.

Take into account the appropriate composition of pregnancy in terms of size, intensity and density.

The rest period between exercises within the training unit should be sufficient for the search sample members to arrive for proper rest so that performance can continue.

Taking into account the continuous and gradual increase in pregnancy.

Totalitarianism.

Diversity.

Its suit for the dental phase of the sample in question.

Program preparation steps:

Determine the number of weeks of the program.

Determining the pregnancy cycle.

Determining the time of total training during the program and then dividing the training time in physical preparation

Specific exercises have been identified as follows:

1. (Standing) Walking on the two walkers.
2. (Standing) walking on the heels.
3. (Standing) walking on both sides of the legs.
4. (Standing) walking with a stab forward.
5. (Standing) walking with arms turn forward.
6. (Parking) walking with the farmers turning back.
7. (Standing) walking with bending alarm and pressing in front of the two men interchangeably.
8. (Standing) Running with touching heels from behind

Set the requirements for physical preparation and then determine the percentage of each physical characteristic.

. Determine the number of days of the week training and then put the weekly pregnancy course and then distribute the weekly training time for both physical and maharia aspects on weekdays according to the pregnancy cycle.

Program time planning:

Program duration 12 weeks

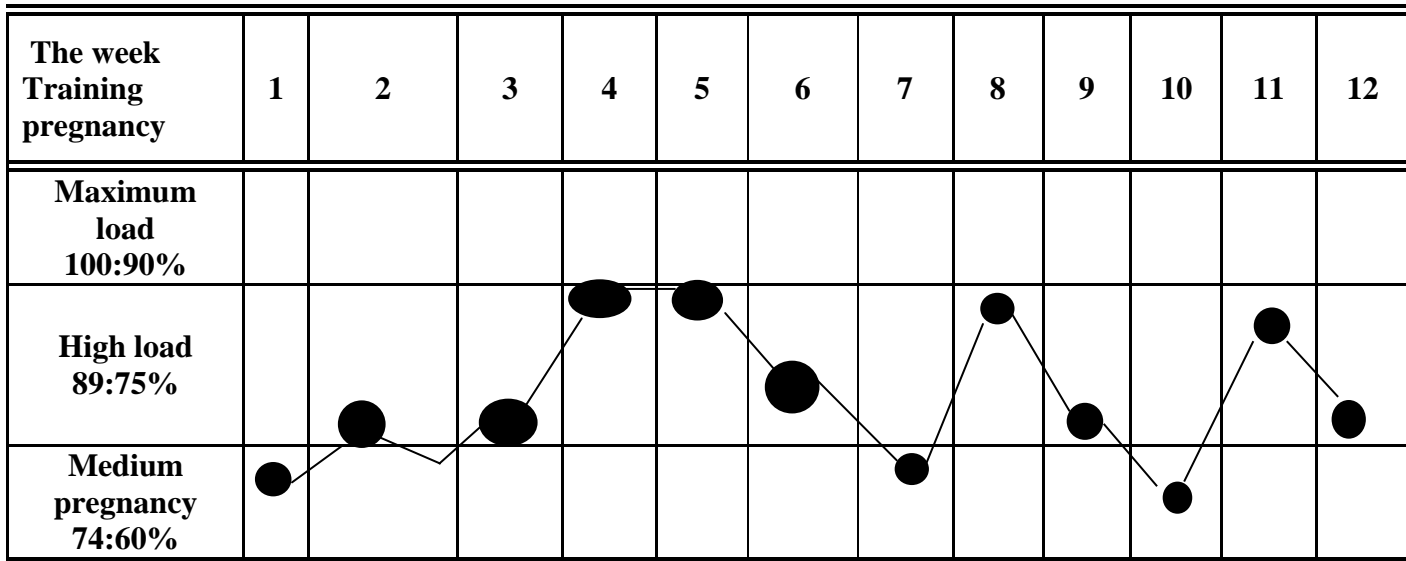
The number of training units is 3 training units.

The number of total units is 36 training units.

Training days (Saturday, Both, Four).

The time of the training unit from (90:120) s and the researchers relied on the following pulse rates to codify pregnancy grades.

Table (4)
Distribution of pregnancy severity to 12 weeks



Shape (4)

Formation of pregnancy during the weeks of the training program

Average program load intensity =

$$70 + 75 + 70 + 80 + 85 + 82 + 74 + 90 + 85 + 70 + 90 + 80 = 951$$

$$951 \div 12 = 79.25\% \text{ (high).}$$

Table (5)
Distribution of physical preparation over 12 weeks

Setup ratio Weeks	Physical preparation	
	Time	Percentage
The first	135q	50%
The second	148.05q	47%
Third	141.75g	45%
Fourth	154.8g	43%
V	105.3q	39%
Sixth	116.55g	37%
Seventh	126q	35%
Eighth	100.8g	32%
Ninth	75.6g	28%
X	90q	25%
Eleventh	79.2g	22%
12th	49.95g	18.5%
Total	1323G	

The physical setting was then distributed with the calculation of their weekly training time during the preparation period:

Table (6)
Distribution of public and private physical preparation during the preparation period
Demonstrates the relative importance of taekwondo n=10 physical variables

M	Physical variables	Relative importance
1	Maximum muscle strength	20%
2	Muscle ability	20%
3	Speed	25%
4	Agility	15%
5	Compatibility	10%
6	Muscle endurance	10%

Executive steps to search:

Tribal measurements:

Tribal measurements of the search sample members were made on **Wednesday and Thursday, August 18, 2021.**

B- Application of the program:

The training program was applied to the research sample for 12 weeks with 3 training units per week from **Saturday, August 21, 2021 to Thursday, 11/11/2021**, and the training for the proposed training program was conducted at The Nile Club in Cairo with the help of a number of (2) trainers where the training dates were from 6 p.m. to 8 p.m.

C- Remote measurements:

The remote measurements of the search sample members were made with the same tribal measurement conditions and tools on **Saturday and Sunday, 13 December 2021.**

The statistical method used.

The following statistical transactions were used:

After the end of the application of the program, the researcher accurately compiled, organized and processed the results using the SPSS statistical package program for social sciences, using the following scientific transactions:

- Descriptive statistics (average, medium, standard deviation, pattern)
 - Spearman-style correlation factors.
 - Wilkxon's test to denote differences.
- The rate of improvement.

The researcher was morally accepted at the 0.05 level
Search results, interpretation and discussion:

Table (7)
The differences in Wilkxon's test between the two measurements
Tribal and remote sample research into physical variables in question

(N=10)

Physical variables	Unit of measurement	Direction	Average grades	Total ranks	Z value	Level of significance
The maximum strength of the muscles of the legs	kg	-	0.00	0.00	2.82*	0.01
		+	5.50	55.00		
		=				
The shear strength of the back muscles	kg	-	0.00	0.00	2.84*	0.00
		+	5.50	55.00		
		=				
Muscular ability of the two men	meter	-	0.00	0.00	2.81*	0.01
		+	5.50	55.00		
		=				
Speed	second	-	5.50	55.00	2.81*	0.01
		+	0.00	0.00		
		=				
Agility	second	-	5.50	55.00	2.82*	0.01
		+	0.00	0.00		
		=				
Compatibility	second	-	5.50	55.00	2.80*	0.01
		+	0.00	0.00		
		=				
Muscle endurance	reiteration	-	0.00	0.00	2.81*	0.01
		+	5.50	55.00		
		=				

- **Z value at a moral level of 0.05 = 1.96**

Table 7 explains:

There are statistically significant differences in wilkson testing of the research sample between tribal and distance measurements in physical measurements under consideration in favor of distance measurement where the calculated **Z** value was greater than its scheduling value at a moral level (0.05), indicating an improvement in the distance measurement in the physical variables in question with a moral indication .

Table (8)
Percentage of improvement rates between the two measurements
Tribal and remote sample research into the skill measurements under consideration
(N=10)

Skill variables	Unit of measurement	Tribal measurement		Telemetry		The difference between the two averages	Percentage improvement%
		medium	Deviation	medium	Deviation		
Ab Chagi	degree	4.70	0.82	7.80	0.63	3.10	65.95%
Pek Chagi	degree	4.70	0.67	8.30	0.67	3.60	76.59%
Abtulio Chagi	degree	4.90	0.56	8.00	0.66	3.10	63.26%

It is clear from table 8:

The percentage of improvement rates between the tribal and remote measurements of the skill measurements research sample in question ranged from 76.59% as the largest value, to 63.26% as the smallest value.

Second: Interpretation and discussion of the results:

Table 8 shows that there are statistically significant differences in Wilkson's test of the basic research sample between tribal and distance measurements in physical measurements under consideration in favor of distance measurement, where the calculated **Z** value was greater than its scheduling value of **1.96** at a moral level (0.05), indicating an improvement in the distance measurement in the physical variables under consideration with a moral significance..

Table 3 also shows that the percentage of improvement rates between the tribal and remote measurements of the basic research sample in physical measurements under consideration ranged from 51.85% as the largest value, 13.84% as the smallest value, where the greater value of the share of the muscle endurance variable while the smaller value was the share of the maximum strength variable of the two men.

The **researcher attributes** this change in the level of physical variables in question to the proposed training program using some special electronic devices where the training program was legalized according to scientific bases as the program included many exercises performed using Hugo, Head Guard, Sandbag , which contributed to the improvement of physical variables in question and this was evident in the variables of muscle strength, muscle ability, speed, agility and endurance at varying rates of improvement. .

This is in line with the results of **the study of Shaimaa Mohammed Abu Zeid** (2021 AD), which confirmed that regulated sports training and the use of modern training methods contribute to the development of the special physical abilities of taekwondo players. (9)

It also agrees with the results of **the Study of Mona Ibrahim Abdel Hamid** (2021), which confirmed in its study that the proposed exercises contributed to improved the tolerance of the muscle capacity of taekwondo builders. (19)

It also agrees with the results of the study of **Majid Yacoub Yusuf** (2020), where he stated that training using tools associated with the nature of the activity practice contributes to the development of the special physical abilities of taekwondo players. (13)

I also agreed with the results of the study **taha Magdi Abdul Hafiz** (2020 AD), who pointed out that the use of sports training using training tools improves the fitness elements of taekwondo players. (10)

Gfran Hosni Hamed (2010) points out that electronic torso training has had a positive and effective impact on the development of the muscle capacity of taekwondo players. (11)

Thus, the first hypothesis, which is " there are statistically significant differences between the average tribal and distance measurements in the level of physical variables under consideration in favour of the distance measurement of the experimental group in question" has been validated.

Conclusions and recommendations:

First: Conclusions:

In light of the objectives and nature of the research and the limits of the research sample and the method used and from the data collected and the results of the statistical analysis **the researcher came to the conclusion of the following:-**

- 1) The training of electronic devices positively affected the physical variables in question, ranging from the rates of improvement between the tribal and remote measurements of the basic research sample in the physical measurements under consideration between 51.85% as the largest value, 13.84% as the smallest value, where the greatest value of the muscle endurance variable was the share of the muscular endurance variable while the smaller value was the share of the maximum strength of the two men.
- 2) Taekwondo electronic device training has played a significant and effective role in the development of physical variables in question.
- 3) Improve tribal measurements that used the training program using electronic devices and which were used in training to improve some of the physical variables of the taekwondo builder.

Second: Recommendations:

In the light of the procedures carried out in this study and within the limits of the selected research sample and based on previous findings and conclusions, **the following can be recommended:**

1. Using the proposed electronic device training program to improve the physical abilities of taekwondo players.
2. Using electronic device training to improve the performance of kicking skills for taekwondo players.
3. Do more research on electronic devices for different age groups of both sexes.
4. Conduct more studies using electronic devices for various activities.
5. Implementation of the proposed research training program to develop and improve the performance of taekwondo emerging.

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