Against Waist Turnover In Fight Position From Blow For Wrestlers

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- **Introduction and Research Problem:**

The development of sport training in advance countries starting from preparing juniors until they reach global sports levels does not come by chance, but through proper scientific planning for training programs and relying on the results of researches conducted in the field of physical and sport education, whereas the objective of the training process is to reach the best methods that works on raising the player achievement level, as the achievement is deemed as the core of the training process.

The significance of the fight position from below in a wrestling match is indicated, whereas most of wrestlers can end the fighting and win in this position and among the most used and effective wrestling skill and also in terms of scoring points is the waist turnover skill, whereas **Wassal Abdul Wahid Kortam (2014)** has analyzed London Olympics Tournament and concluded that through the analysis that the most effective and points scoring skill of fighting position from below is (waist turnover skill). (42)

Both **Nabil Hosni El-Shourbagy (2000), Mohamed Ashmawy (2003)** mention that the waist turnover skill is deemed as the best and most effective skill, whereas it is deemed among the technical moves, from which the highest technical points can be acquired. (32) (26)

Defense against waist turnover is deemed among the most significant skills and procedures, which shall draw the attention of researches, trainers, and players, whereas the players, who master defense against waist turnover, take this position as a truce for rest and benefit therefrom in converting defense into offence and acquire technical points, as in the defense position against waist turnover, a fixed muscle contraction is made, so it would make the defender in a more stable position and this stability is being developed through fixed muscle contraction training, which is what is carried out by core stability training.

Both **Mosaad Ali Mahmoud (2003) and Mohamed Reda El-Rouby (2005)** see that the wrestler really needs the muscle strength to overcome the external resistance for the competitor, which is represented in body weight and the strength exerted by him, in addition to earth gravity resistance, whereas the fixed muscle training is among the best methods to develop the wrestlers' muscle strength. (30: 240) (29: 126)

Chabut, L (2009) refers that core stabilization term is used to express how the muscle existing in the core area maintain the stability and balance of spine and the body in general. (16: 29)

Kibler WB, Press J, Sciascia A. (2006), and others mention that the core stability expresses the ability to control the core position and movement above the hip for optimum performance, as well as shifting and controlling the strength and parts during the practice of sports activity. (24: 189)

Bliss (2005) sees that the training of core stability and strengthening became the main key for the athletes training program for all levels, whereas the core muscles operates as a bridge that connect the upper part and the lower part of the body, whereas the strength resulted from the core usually called the energy source for parts and for the occurrence of initial stability of body, that requires the preparation of a sound spine. (14:56)

Allen & kip (2002) adds that among the most significant benefits from practicing the training of strengthening the core muscle is the increase of movement efficiency for the body during the practice of sports and daily activities, as it also helps on increasing the body stability in the core and hip and also increasing control in body and balance during movement. (11:41)

Aisha Abdul-Mawla and Iman Suleiman (2013) indicate that core stability training focuses on strength movements with multiple dimensions, which needs multiple muscles in order to work together to obtain the maximum training return on contrary to the common from programs, which rely on the independent muscle performance. They also see that attention shall be paid to the development of central muscles, which support the spine and core, where the deep muscles work with visible surface muscles in harmony to support and stabilize the spine, whereas when the core is properly stabilized during the performance of sport skills, the stress falling on the back is alleviated ad makes the body moves with more freedom. (5:262)

Willardson (2008) sees that the application of core stability training contributes in raising the athletic performance by providing the basis, upon which the upper and lower parts rely in contraction to accelerate or slow the movements of body parts. (43)

The research problem takes shape in that through the researcher practice of wrestling sport as a player then a trainer and follow-up on local and international tournaments, he found failure in defense against waist turnover from below for most players, which make them exposed to loss, when they reach this position, whether during the fight or by regulation due to negativity or warning. Despite that some players, who mater defense against waist turnover, take this position as a truce for rest and benefit therefrom in converting defense into offence and obtain technical points and the reason for that returns to a failure in training on this position, its physical requirements, and deficiency in the level of strength type required by this position, as well as the used training methods and techniques, which do not factor into account the working muscles and its requirements in performance, whereas through the researcher experience, analysis, and utilizing the opinions of experts in wrestling sport, he found that position of body in defense against the waist turnover requires maximum strength that supersede the competitor strength and the strength exists in the form of stable muscle contraction and that called the researchers to design a program by using core stability training, which would develop the muscle strength related to the core area through stable muscle contraction, which is similar in its performance technique with defense against waist turnover from the fighting position from below.

- **Research objectives:**
Designing a training program by using core stability training for the purpose of: -
1- Identifying the extent of the training program effect on the strength variables affecting the defense performance against waist turnover for the experimental group individuals.
2- Identifying the effect of the training program on the effectiveness of defense against the waist turnover for the experimental group individuals.

Research assumptions:

1- There are differences with statistical indications between post and prior measurement for both the experimental group and control group in strength variables subject matter of the research and effectiveness of defense against waist turnover in the direction of post measurement.
2- There are differences with statistical indications between the two post measurements for both the experimental group and control group in strength variables subject matter of the

research and effectiveness of defense against waist turnover for the interest of experimental group.

- **Research terms:**

Core stability training (procedural definition)

It is training conducted without any movement from the body lack of prolonging or shortening in muscle fibers for the purpose of developing one of the variables of muscle strength, whereas it works on the external and internal muscles and it achieves stability and balance for all parts of the body, whereas the core is deemed as the basis in performing these trainings.

- **Research procedures:**

1- Methodology:

The researcher used the experimental methodology due to its suitability to the research nature by using the experimental design with prior and post measurement on both (experimental and control) groups.

2- Research sample:

The research sample was selected with the intentional method from Menoufia players (under the age of 23 years) and registered in The Egyptian Wrestling Federation, whereas the research amounted to (39) wrestlers, (9) wrestlers were selected to conduct surveys on them and thereby the main study was applied on (30) wrestlers and they were divided into two equal groups, one of which od the experimental group and the other is the control group with the amount of (15) wrestlers per each group. Table (1) indicates the harmony of research sample in variables of (growth – physical variables).

Table (1)
Consistency of Research Samples in Variables of (growth – physical variables)   N=39

	Variables	Unit	Mean	Median	St.Div	Skewness
Growth variables	Age	Year	21.41	22	1.82	0.375
	Length	CM	175.1	176	5.03	0.636
	Weight	K.G.	84.26	80	10.93	0.19
	Training age	Year	11.77	11	2.81	0.01
Maximum motor speed	Straight abdominal muscles with core bending weight device	Pound	53.97	55	3.07	0.14
	For the right oblique abdominal muscles in the core bending weight machine	Pound	42.44	40	2.53	0.053
	For the left oblique abdominal muscles in the core bending weight machine	Pound	41.15	40	3.13	0.204
	For back muscles with weight machine of back stretching	Pound	65.77	65	3.35	0.186
Stable maximum strength	For back muscles using the dynamometer	K.G.	185.56	165	19.4	0.395
	For leg muscles using the dynamometer	K.G.	255.36	254	11.83	0.652
	For right fist using the manometer.	Pound	121	121	6.03	0.182
	For left fist using a manometer.	Pound	122.69	120	5.52	0.455
Strength endurance	Stability of tilted flatness with parts distancing	Minute	1.28	1.29	0.036	0.337
	Stability of tilted flatness to the right side with lifting the left arm	Minute	1.35	1.35	0.021	0.223
	Stability of tilted flatness to the left side with lifting the right arm	Minute	1.32	1.32	0.045	0.422
Flexi-bility	Horizontal	CM	41.49	42	10.96	0.648
	Vertical	CM	46.03	46	2.85	0.278
Effecti-veness	Experimental match, defense against the opponent from fighting position from below for the period of (1 min.)	Points	6.05	6	1.62	0.048

It is indicated from **table (1)** that the sprain coefficient in growth and physical variable was limited between (-3 ، +3), which indicate the consistency of the research sample individuals in these variables.

Equivalence of the two research groups

Table (2)
Arithmetic Average, Standard Deviation, and (T) value and its indication in (growth - physical) variables for both (experimental / control) groups N1= N2= 15

	Variables	Experimental Group (n=15)		Control Group (n=15)		T
		Mean	St.Div	Mean	St.Div	
Growth variables	Age	21.27	1.87	21.2	1.78	0.1
	Length	175.4	3.81	174.4	5.75	0.561
	Weight	88.2	13.6	81	7.75	1.78
	Training age	11.73	3.17	11.2	2.48	0.513
Maximum motor speed	Straight abdominal muscles with core bending weight device	53	2.54	55	3.27	1.871
	For the right oblique abdominal muscles in the core bending weight machine	41.33	2.29	43	2.54	1.89
	For the left oblique abdominal muscles in the core bending weight machine	42	3.16	41.67	3.09	0.29
	For back muscles with weight machine of back stretching	66	4.17	65.67	3.2	0.257
Stable maximum strength	For back muscles using the dynamometer	157.27	13.03	146	24.37	0.944
	For leg muscles using the dynamometer	252.93	13.99	258.2	11	1.146
	For right fist using the manometer.	123.13	6.35	119.87	5.43	1.525
	For left fist using a manometer.	122.2	5.27	122.73	6.05	0.257
Strength endurance	Stability of tilted flatness with parts distancing	1.27	0,04	1.28	0.03	0.889
	Stability of tilted flatness to the right side with lifting the left arm	1.35	0,02	1.35	0.02	1.159
	Stability of tilted flatness to the left side with lifting the right arm	1.3	0,05	1.31	0.04	0.481
Flexi-bility	Horizontal	37.13	15.38	45.4	6.43	1.92
	Vertical	47.27	1.94	45.47	3.4	1.78
Effecti-veness	Experimental match, defense against the opponent from fighting position from below for the period of (1 min.)	6.13	1.59	6	1.69	0.22

The T value of the table is at the level of (0.05) = 2.048

Table (2) shows that there are statistically unexpressive differences between the two groups (experimental/control) in the variables under consideration, indicating the equivalence of the two groups in these variables, since the value of the calculated "T" is less than the "T"

tools and devices used in data collection.

1. Reference survey:

The researcher has conducted survey for the studies and scientific references, which have discussed the core stability, defense against waist turnover from fighting position from below within the limits of what is available to the researcher and that for the purpose of identifying the techniques, methods, and physical content for the used training programs, and also benefit therefrom in how establish the programs, form weights, and benefit from its results in discussing the current study.

2. **Questionnaire form. Attachment (2)**

The researcher designed a questionnaire form to explore the experts' opinions **enclosure (1)** in the field of the study variables through communications and personal interviews to give opinions in the program variables and time of training on the defense part against waist turnover, established training, determining physical variables, as well as tests

suitable for its measurement and that in the period from 2/3/2019 to 31/3/2019, whereas addition and deletion were taken into account therein in line with the experts opinions.

3. **Tests used in the research. Attachment (4)**

- Maximum motor strength (for the abdominal muscles with the weight machine bending the core – for back muscles with weight machine stretching the back – for titled abdominal muscles with core bending weight machine).
- Stable maximum strength (For back muscles using the dynamometer -For leg muscles using the dynamometer -For right fist using the manometer - For left fist using a manometer).
- Strength endurance (stability of tilted flatness with parts distancing - Stability of tilted flatness to the right side with lifting the left arm - Stability of tilted flatness to the left side with lifting the right arm).
- Flexibility (horizontal - vertical).
- Defense effectiveness against waist turnover (Experimental match, defense against the opponent from fighting position from below for the period of (1 min.).

4. **Devices and tools used in the research:**

Electronic balance to measure the weight to the closest kilogram - restometer to measure the lengths to the closest centimeter - stop watch to measure time in seconds and to the closest 0.01 per second - manometer to measure the grip strength - dynamometer to measure the constant strength - wrestling mat – (Lower Back) (Lumbar Extension), Crunch with Chest Pad, Rotary Torso.

5. **Data registration form. Attachment (3)**
Training program. Attachment (5)

The training program was prepared by following the steps below:

- The researcher conducted a reference survey for Arabic and English books within the limits of the researcher knowledge.
- A survey was conducted for the researchers and studies associated with research variables in the field of wrestling training and also in the field of core stability training.
- Meeting and contacting experts in wrestling field.

Main objective of the program:

The program aims at raising the level of effectiveness of defense against waist turnover from fighting position from below.

Basis of program establishment:

A. Building programs in accordance with the scientific basis.
B. The training program shall be in line with the established goals.
C. The program and its contents of training shall be suitable for age group of the chosen sample.
D. The program flexibility and adjustability.
E. Taking advantage from previous studies, which have designed similar and associated training programs.
F. Continuity and regularity in practicing the training program until it achieves the desired benefit.
G. Taking into account the training basis upon the establishment of training program for training unit, such as (warm up – main part – conclusion).
H. Taking into account the individual differences upon the establishment of the program.

Training program determinants
- **Program execution period:**

The proposed training program will be executed on the **special preparation period and pre-competition** and the program application period was set with (**12 weeks**) with the amount of (**3 training units**) per week, whereas the proposed training program shall be applied on wrestling mat.

Knowing that the experimental and control groups are training (**6 training units**) a week with the amount of three units inside the Weightlifting Hall with the same training program and at the same time and the remaining three units, the training is on the mat inside the wrestling hall, but the experimental group is training with the proposed training program by using core stability trainings and the control group is training with the traditional program as follows:

Table (3)
The distribution of the weekly training for the experimental and control groups

Day	Experimental group	Control group
Saturday	Training program within the Weightlifting Hall from (8:10) pm	
Sunday	The proposed training program by using core stability trainings on the mat inside the wrestling hall from (6 : 8)PM	Traditional training program on the mat inside the wrestling hall from (8 : 10) PM
Monday	Training inside the Weightlifting Hall from (8 : 10) PM	
Tuesday	The proposed training program by using core stability trainings on the mat inside the wrestling hall from (8:10)PM	Traditional training program on the mat inside the wrestling hall from (6 : 8) PM
Wednesday	Training inside the Weightlifting Hall from (8 : 10) PM	
Thursday	The proposed training program by using core stability trainings on the mat inside the wrestling hall from (6 :8)PM	Traditional training program on the mat inside the wrestling hall from (8 : 10) PM
Friday	Weekly rest	

- **Training unit time (120 min.).**
- **Program total time (4320 min.), which is (72 hours).**

Table (4)
Percentage of training time on defense against waist turnover
Inside the main part in accordance with experts' opinions.

Part	Fighting position	Percentage
Main part	Percentage of training time on fighting position from above	50%
	Percentage of training time on offence in fighting position from below	25%
	Percentage of training time on defense in fighting position from below	25%

- **Used training method:**

(low intensity periodic training – high intensity periodic training – repetitive training**).**

- **Forming training loads – attachment (5)**

The researcher used undulate method in forming training load during the program period, whereas the researcher used:

✓ Formation (1 – 3), (1 - 2), (1 - 1)
- **Forming training loads:**

The intensity of training loads used in the program were specified, whereas the maximum intensity reached (95 – 100%), intensity less than maximum (85 – 94%), high intensity (75 – 84%), average intensity (65 – 75%), low intensity (50 – 64%).

Rationing the intensity of training loads inside the training program by used pulse rate, with the application of the following equation: pulse targeted for training THR.(2: 235)

= rest pulse + (training percentage × (lowest pulse – rest pulse)), whereas:
- Sample age average = 21 years old.
- Average of sample rest pulse = 64 p/min.
- Sample maximum pulse = 220 – age = 220 – 21 = 199 p/min.
- Sample pulse reserve = lowest pulse rate – pulse rate in rest = 199 – 64 = 135 p/min.
-

Rationing training loads by using pulse rate

(Maximum load)   Its percentage 95 : 100%   Pulse rate from 192 : 199 p/min.

(Load less than maximum)   Its percentage 85 : 94%   Pulse rate from 178 : 191 p/min.

(High load)   Its percentage 75 : 84%   Pulse rate from 165 : 177 p/min.

(Average load)   Its percentage 65 : 75%   Pulse rate from 152 : 164 p/min.

The researcher rationed the exercises load of the training program through specifying the time suitable for each training conducted by the exploratory sample individuals, which represents the time, after which the player cannot continue in performing properly, then the time average for each training will be determined to be the training maximum limit.

Table (5)
Basis of load formation based on performance time according to Energy Production Systems

Energy System	Exercise period	Exercise reps	No. of Sets	No. of exercise reps in set	exercise : rest	Rest type
ATP – PC	10 sec	50	5	10	1 : 3	active rest (walking and stretches)
	15 sec	45	5	9		
	20 sec	40	4	10		
	25 sec	32	4	8		
ATP - PC , LA	30 sec	25	5	5	1 : 3	light to moderate exercises and Jogging
	40-50 sec	20	4	5		
	60-70 sec	15	3	5		
	80 sec	10	2	5		
LA , O2	1.3-2 min	8	2	4	1 : 2	light to moderate exercises
	2.1-2.4 min	6	1	6		
	2.5-3 min	4	1	4	1 : 1	

(12: 94)

Trainings used in the proposed program. Attachment (5)

The trainings of core stability (special and general) were used after presentation to experts inside the physical part (special and general) related to the training on defense position for fighting from below for the experimental group by using body weight, Swiss ball, medical ball, and hanging strap (TRX).

- **Training program for control group:**
A similar training program was used for the training group in terms of program period, number of units, unit time, and its parts, with difference that the control group used

traditional trainings in special and general physical part related to defense against waist turnover, which is represented in individual and dual agility trainings with body weight.

Whereas the difference between the experimental and control groups in using core stability trainings (subject matter of research) in the part of general and special physical preparation is for the experimental training only, which is related to the part of defense against waist turnover in fighting position from below and lack of applying it on the control group.

Surveys studies:

The researcher has selected a random sample from the research community that consists of (9) players from outside the main research sample and he conducted tests on them with help of assistants and that on from day 26/3/2019: 3/4/2019.

The objective of this study:

- Making sure of the proper execution and application of measurements, tests, and validity of devices, tools, and relative procedures in accordance with the conditions set thereto and extent of the place appropriateness.
- Determining the time necessary for the measurement process and the time taken by each player for each test upon measurement.
- Identifying the mistakes, which can be committed during the execution of tests and measurements, arrange its progress, and extent of its appropriateness for the age group.
- Make sure that the players comprehend the trainings used and ease of their response thereto.
- Rationing core stability trainings in order to determine the degree of training load.

The tests suitability for the research sample was confirmed, as well as the tools and place of conducting the measurements, in addition to making sure that the assistants comprehend how to conduct the tests in order to avoid the measurements errors.

Scientific coefficients for used tests:

1. Test credibility:

The researcher calculated the credibility of distinction between two group, one of which is distinct from outside the original research sample and the other is distinct (exploratory) from 26: 27/3/2019 and the number of each group amounted to (9) wrestlers.

Table (6)
The significance of the differences between the two groups (Both distinctive
or non- distinctive) in the tests under consideration   N1=N2= (9)

	Variables	Distinctive group (n=10)		In distinctive group (n=10)		T
		Mean	St.Div	Mean	St.Div	
Maximum motor speed	Straight abdominal muscles with core bending weight device	53.89	3.33	47.22	2.64	*4.707
	For the right oblique abdominal muscles in the core bending weight machine	43.33	2.5	39.44	3	*2.985
	For the left oblique abdominal muscles in the core bending weight machine	38.99	2.2	36.11	2.2	*2.673
	For back muscles with weight machine of back stretching	65.56	3	57.78	2.64	*5.838
Stable maximum strength	For back muscles using the dynamometer	151.67	18.43	130.33	9.97	*3.055
	For leg muscles using the dynamometer	254.67	9.14	207	41.05	3.4*
	For right fist using the manometer.	119.33	6.18	104.78	2.33	*6.606
	For left fist using a manometer.	123.44	5.55	113.56	5.55	*3.781
Strength endurance	Stability of tilted flatness with parts distancing	1.3	0.023	1.11	0.058	*9.401
	Stability of tilted flatness to the right side with lifting the left arm	1.34	0.022	1.04	0.014	*34.84
	Stability of tilted flatness to the left side with lifting the right arm	1.36	0.023	1.07	0.045	*17.21
Flexi-bility	Horizontal	42.22	4.41	50.89	1.83	*5.444
	Vertical	44.89	2.62	41.78	1.92	*2.873
Effecti-veness	Experimental match, defense against the opponent from fighting position from below for the period of (1 min.)	5.78	1.56	7.78	1.2	*3.043

The value of "T" of the table (2.120) at a significant level (0.05)

Table (5) shows statistically significant differences in favor of the characteristic group indicating the validity of the tests.

2. Tests stability:

The researcher calculated the tests stability by using retests on an exploratory sample, which consists of (9) wrestlers and that on day of 3/4/2019, after a separating time period amounts to a week between the two applications.

Table (7)
Arithmetical mean, standard deviation and correlation coefficient Between the first application and the second application of the physical tests in question for the exploratory sample N = (9)

Variables		1st application		2nd application		R
		Mean	St.Div	Mean	St.Div	
Maximum motor speed	Straight abdominal muscles with core bending weight device	53.89	3.33	55.56	3.91	0.773
	For the right oblique abdominal muscles in the core bending weight machine	43.33	2.5	44.44	3	0.693
	For the left oblique abdominal muscles in the core bending weight machine	38.99	2.2	39.44	3	0.839
	For back muscles with weight machine of back stretching	65.56	3	67.22	3.63	0.732
Stable maximum strength	For back muscles using the dynamometer	151.67	18.43	152.22	18.56	0.997
	For leg muscles using the dynamometer	254.67	9.14	255.67	8.98	0.982
	For right fist using the manometer.	119.33	6.18	120.11	6,37	0.982
	For left fist using a manometer.	123.44	5.55	124.67	6.48	0.961
Strength endurance	Stability of tilted flatness with parts distancing	1.3	0.023	1.29	0.02	0.753
	Stability of tilted flatness to the right side with lifting the left arm	1.34	0.022	1.33	0.03	0.684
	Stability of tilted flatness to the left side with lifting the right arm	1.36	0.023	1.34	0.03	0.677
Flexi-bility	Horizontal	42.22	4.41	42	4.33	0.995
	Vertical	44.89	2.62	45.11	2.62	0.968
Effecti-veness	Experimental match, defense against the opponent from fighting position from below for the period of (1 min.)	5.78	1.56	5.78	1.56	0.795

The value of "R" of the table (0.666) at a significant level (0.05)

Table (6) shows that the calculated "R" value is greater than the "R" value of the table, indicating the stability of the tests in question.

- Pre-measurements:

The Pre measurements were conducted for the members of the research sample on 5/4/2019 to 6/4/2019

- Implementation of the program:

The proposed program was implemented from 7/4/2019 to 27/6/2019

- Post-measurements:

Measurements were carried out on 28/6/2019 to 29/6/2019 with the same conditions and specifications of pre-measurement and in the same place.

Statistical Processes:

In this study, the researcher used the following statistical processes:

- Arithmetic mean - standard deviation - mean - torsion coefficient

- Coefficient of correlation - coefficient Eta² - test the significance of differences (T) - the percentage of improvement

Results presentation and discussion

First: results presentation

Table (8)
Differences indication between (prior / post) measurement For the experimental group in physical variables and effectiveness against waist turnover N = (15)

Variables		Premeasure		Post-measure		T
		Mean	St.Div	Mean	St.Div	
Maximum motor speed	Straight abdominal muscles with core bending weight device	53	2.54	64	4.42	12.5*
	For the right oblique abdominal muscles in the core bending weight machine	41.33	2.29	52.67	3.72	19.2*
	For the left oblique abdominal muscles in the core bending weight machine	42	3.16	57.33	5.3	*16.9
	For back muscles with weight machine of back stretching	66	4.17	83.67	7.43	*14.9
Stable maximum strength	For back muscles using the dynamometer	157.27	13.03	183.4	11.58	*42.9
	For leg muscles using the dynamometer	252.93	13.99	285	12.82	17*
	For right fist using the manometer.	123.13	6.35	135.53	4.29	19.9*
	For left fist using a manometer.	122.2	5.27	133.73	4.57	31.7*
Strength endurance	Stability of tilted flatness with parts distancing	1.27	0,04	2.21	0.11	34.5*
	Stability of tilted flatness to the right side with lifting the left arm	1.35	0,02	2.36	0.02	103.5*
	Stability of tilted flatness to the left side with lifting the right arm	1.3	0,05	2.15	0.02	69.2*
Flexi-bility	Horizontal	37.13	15.38	28.33	13.54	17.6*
	Vertical	47.27	1.94	51.6	1.5	17.2*
Effecti-veness	Experimental match, defense against the opponent from fighting position from below for the period of (1 min.)	6.13	1.59	1.33	0.98	18.3*

Table (T) value (1.761) at moral level (0.05)

It is indicated from **table (8)** that there are differences with statistical indications between both the prior and post measurement for the experimental group for the interest of post measurement in physical variable and defense against waist turnover, whereas the calculated value of test (T) is higher than table (T) value for all variables.

Table (9)
Differences indication between (prior / post) measurement For the control group in physical variables and effectiveness against waist turnover   N = (15)

	Variables	Premeasure		Post-measure		T
		Mean	St.Div	Mean	St.Div	
Maximum motor speed	Straight abdominal muscles with core bending weight device	55	3.27	60.67	4.58	12.475*
	For the right oblique abdominal muscles in the core bending weight machine	43	2.54	48.33	2.44	*9.025
	For the left oblique abdominal muscles in the core bending weight machine	41.67	3.09	46	2.8	*9.539
	For back muscles with weight machine of back stretching	65.67	3.2	71.33	3.52	12.475*
Stable maximum strength	For back muscles using the dynamometer	146	24.37	165.8	23.96	*4.731
	For leg muscles using the dynamometer	258.2	11	264.6	11.17	*12.911
	For right fist using the manometer.	119.87	5.43	127.27	6.46	*2.972
	For left fist using a manometer.	122.73	6.05	126.73	6.39	*20.494
Strength endurance	Stability of tilted flatness with parts distancing	1.28	0.03	1.45	0.24	14.325*
	Stability of tilted flatness to the right side with lifting the left arm	1.35	0.02	1.55	0.03	19.92*
	Stability of tilted flatness to the left side with lifting the right arm	1.31	0.04	1.55	0.03	18.307*
Flexi-bility	Horizontal	45.4	6.43	44.27	6.52	12.475*
	Vertical	45.47	3.4	47.33	3.37	14*
Effecti-veness	Experimental match, defense against the opponent from fighting position from below for the period of (1 min.)	6	1.69	3.87	1.59	16*

Table (T) value (1.761) at moral level (0.05)

It is indicated from **table (9)** that there are differences with statistical indications between both the prior and post measurement for the control group in the favor of post measurement in physical variable and defense against waist turnover, whereas the calculated value of test (T) is higher than table (T) value for all variables.

Table (10)
Differences indication between (prior / post) measurement For the experimental and control group in physical variables and effectiveness
against waist turnover   N1 = N2 = (15)

	Variables	Experimental N=15		Control N=15		T
		Mean	St.Div	Mean	St.Div	
Maximum motor speed	Straight abdominal muscles with core bending weight device	64	4.42	60.67	4.58	2.435*
	For the right oblique abdominal muscles in the core bending weight machine	52.67	3.72	48.33	2.44	3.775*
	For the left oblique abdominal muscles in the core bending weight machine	57.33	5.3	46	2.8	7.32*
	For back muscles with weight machine of back stretching	83.67	7.43	71.33	3.52	5.809*
Stable maximum strength	For back muscles using the dynamometer	183.4	11.58	165.8	23.96	2.561*
	For leg muscles using the dynamometer	285	12.82	264.6	11.17	4.648*
	For right fist using the manometer.	135.53	4.29	127.27	6.46	4.127*
	For left fist using a manometer.	133.73	4.57	126.73	6.39	3.447*
Strength endurance	Stability of tilted flatness with parts distancing	2.21	0.11	1.45	0.24	26.709*
	Stability of tilted flatness to the right side with lifting the left arm	2.36	0.02	1.55	0.03	87.381*
	Stability of tilted flatness to the left side with lifting the right arm	2.15	0.02	1.55	0.03	62.329*
Flexibility	Horizontal	28.33	13.54	44.27	6.52	4.106*
	Vertical	51.6	1.5	47.33	3.37	4.475*
Effectiveness	Experimental match, defense against the opponent from fighting position from below for the period of (1 min.)	1.33	0.98	3.87	1.59	5.241*

Table (T) value (1.701) at moral level (0.05)

It is indicated from **table (10)** that there are differences with statistical indications between both the prior and post measurement for the experimental and control group in the favor of experimental group in physical variable and defense against waist turnover, whereas the calculated value of test (T) is higher than table (T) value.

Table (11)
Program impact value (ETA 2) and improvement percentage between (prior / post) measurement For the experimental group in in physical variables and effectiveness against waist turnover   N=(15)

Variables		Premeasure		Post-measure		ETA2 coefficient	percentage of improvement
		Mean	St.Div	Mean	St.Div		
Maximum motor speed	Straight abdominal muscles with core bending weight device	53	2.54	64	4.42	0.9	20.8%
	For the right oblique abdominal muscles in the core bending weight machine	41.33	2.29	52.67	3.72	0.9	27.4%
	For the left oblique abdominal muscles in the core bending weight machine	42	3.16	57.33	5.3	0.9	36.5%
	For back muscles with weight machine of back stretching	66	4.17	83.67	7.43	0.9	26.8%
Stable maximum strength	For back muscles using the dynamometer	157.27	13.03	183.4	11.58	0.9	16.6%
	For leg muscles using the dynamometer	252.93	13.99	285	12.82	0.9	12.7%
	For right fist using the manometer.	123.13	6.35	135.53	4.29	0.9	10.1%
	For left fist using a manometer.	122.2	5.27	133.73	4.57	0.9	9.4%
Strength endurance	Stability of tilted flatness with parts distancing	1.27	0,04	2.21	0.11	0.9	74%
	Stability of tilted flatness to the right side with lifting the left arm	1.35	0,02	2.36	0.02	0.9	74.8%
	Stability of tilted flatness to the left side with lifting the right arm	1.3	0,05	2.15	0.02	0.9	65.4%
Flexi-bility	Horizontal	37.13	15.38	28.33	13.54	0.9	23.7%
	Vertical	47.27	1.94	51.6	1.5	0.9	9.2%
Effecti-veness	Experimental match, defense against the opponent from fighting position from below for the period of (1 min.)	6.13	1.59	1.33	0.98	0.9	78.3%

The results of **table (11)** indicate that (ETA 2) value was (0.9), which indicates that the impact strength of the proposed grogram on physical variables and effectiveness of defense against waist turnover and the improvement percentages ranged between (9.2% and 74.8%) between (prior / post) measurement for the experimental group in physical variables and effectiveness of defense against waist turnover in post measurement direction.

- **Estimation for ETA 2 coefficient**

(From zero to less than 0.3 = weak impact)
(From zero to less than 0.5 = medium impact)
(From 0.5 to 1 - powerful impact)

Table (12)
Improvement percentage between (prior / post measurement) For the control group in physical variables and effectiveness of defense against waist turnover   **N = (15)**

Variables		Premeasure		Post-measure		percentage of improvement
		Mean	St.Div	Mean	St.Div	
Maximum motor speed	Straight abdominal muscles with core bending weight device	55	3.27	60.67	4.58	%10.3
	For the right oblique abdominal muscles in the core bending weight machine	43	2.54	48.33	2.44	%12.4
	For the left oblique abdominal muscles in the core bending weight machine	41.67	3.09	46	2.8	%10.4
	For back muscles with weight machine of back stretching	65.67	3.2	71.33	3.52	%8.6
Stable maximum strength	For back muscles using the dynamometer	146	24.37	165.8	23.96	%13.6
	For leg muscles using the dynamometer	258.2	11	264.6	11.17	%2.5
	For right fist using the manometer.	119.87	5.43	127.27	6.46	%6.2
	For left fist using a manometer.	122.73	6.05	126.73	6.39	%3.3
Strength endurance	Stability of tilted flatness with parts distancing	1.28	0.03	1.45	0.24	%13.3
	Stability of tilted flatness to the right side with lifting the left arm	1.35	0.02	1.55	0.03	%14.8
	Stability of tilted flatness to the left side with lifting the right arm	1.31	0.04	1.55	0.03	%18.3
Flexi-bility	Horizontal	45.4	6.43	44.27	6.52	%2.5
	Vertical	45.47	3.4	47.33	3.37	%4.1
Effecti-veness	Experimental match, defense against the opponent from fighting position from below for the period of (1 min.)	6	1.69	3.87	1.59	%35.5

The results of **table (12)** indicates that the improvement percentages ranged between (2.5% and 35.5%) between (prior / post) measurement for control group in physical variables and effectives of defense against waist turnover in direction of post measurement.

Second: results discussion

In light of the previous presentation for the results concluded by the researcher and within the frame of the research objectives, assumptions, guided by the previous results, and what is mentioned in scientific references, the researcher discusses these results in the following:

It is indicated from **table (8)** that there as differences with statistical indications between (prior / post) measurement for the experimental group in the tests subject matter of the researcher, whereas the calculated (T) value ranged for the maximum strength tests for straight abdominal muscles with core bending weight machine (12.486), maximum motor strength for right tilted abdominal muscles with core bending machine (19.179), maximum motor strength for left tilted abdominal muscles with core bending machine (16.877), maximum motor strength for back muscles with back stretching weight machine (14.948), constant maximum strength for back muscles by using dynamometer (42.954), constant maximum strength for leg muscles by using dynamometer (17.049), maximum constant strength for right fist by using manometer (19.892), maximum constant strength for left fist by using manometer (31.737), strength endurance for inclined flattening with parts distancing (34.522), strength endurance for flattening inclined to the right (103.5), strength endurance for flattening inclined to the left side (17.617), vertical flexibility (17.197), defense effectiveness against waist turnover (18.33), which are values bigger than (T) table value,

which was (1,761) at freedom degree (14), which indicates that the proposed training program by using core stability training established by the researcher, in which he took into account that the working muscles and motor courses for skill performance have impacted the physical variables subject matter of the research. As **Mohamed Ashmawy (2003) (26)** and **Alaa Qenawy (1996) (6)** mention, in order for the wrestler to implement the skills effectively in the matches, this requires special preparation that includes the physical side linked to the skill side.

Whereas attention shall be paid to core stability trainings, which help in developing the muscle strength for body and core muscles, which are represented in abdominal and back muscles, which work on linking the upper part to the lower part of the body, whereas the performance of some core stability training require from the player to perform high constant contractions constantly, in addition to involving abdominal muscle group in many of core stability trainings, which led to improvement of maximum strength and enduing the strength of abdominal and back muscle for the research sample individuals.

The results of this study agree with what **El Sayed Abdul Maqsoud (1997)** referred that the performance of proper core movements and what that includes of performing constant balance operations thereto can only be reached through complex cooperation between all center muscles. However, these muscle groups are involved through optimal computability in performing core movements, as well as maintaining the spine in a proper position during motor performance. (20: 412)

The research sees that core stability trainings can be utilized in that it gives body middle area strength and control that can be utilized in stability strength on the ground by hands, legs, and core upon the performance of defense against waist turnover.

These results agree with what is concluded by the study of **Sekendiz & Korkusuz (2010) (41), Saeterbakken & Other (2013) (35), Sameh Tantawi (2011) (40), Hussein Abdel Salam (2012) (21), and Ihab Abdel Fattah (2013) (19),** that core stability trainings have positive impact on improving skill performance level.

Zaki Muhammad Muhammad Hassan (2004), Muhammad Jaber Bureka, and Ihab Fawzi Al-Badawi (2004) indicate that the muscular strength of all kinds is the basis or the main rule for most athletic activities, especially activities that rely on muscle strength of all kinds, speed and explosive movements such as wrestling. (45: 17) (28: 8)

It is also indicated from **table (11)** that the value of ETA 2 coefficient, program impact strength was (0.9) and was bigger than (0.5), which indicates that the proposed training program by using core stability trainings established by the researcher, which had big impact strength and highly effective in in improving and developing the physical abilities subject matter of the research, who took into account upon its establishment the scientific basis, which contain trainings similar in its muscles' work with the requirements of skill performance and in the same muscle and motor course, which had a great impact on these variables and that agrees with **Sahal Asran (1996) (36)** that the muscle strength is deemed among the most important requirements of wrestling due to performance nature and multiplicity of resistances that the wrestler encounters while carrying out offensive and defensive moves and counterattack, whereas **Mohamed Hassan Allawi and Abu Al-Ella Abdel-Fattah (2000)** confirm that the development of motor skills is closely related to the development of the necessary physical fitness elements as the player will not be able to master the motor skills for the type of specialized sports activity in the event he lacks the necessary physical characteristics for such type of activity. (27: 80)

Core stability training are among the important trainings, which helps on the development of a muscle strength for center muscles, which are represented in abdominal and back muscles and these are the most important features for core stability training, which is concentrating on center muscle group due to what it contains of trainings that helps in strengthening the abdominal and back muscle, whereas the strong center muscles transfer the movement from the lower part to the upper part and also prevent power leak, as it also work on making balance between the two parts and the dysfunction in the center area will affect the physical and skill performance.

These results agree with the study of **Samson (2005) (39), Kibler WB & others (2006) (24), Willardson (2007) (44), Willardson (2008) (43), Salto (2009) (37), Sameh Tantawi (2011) (38),** that core stability trainings work on supporting the core area, therefore, it's sometimes called lumbar stability trainings and the effective impact for training this body area, whether the impact was direct or indirect for the transference of training impact on the skillful level.

These results are supported with improvement percentage, whereas the results of **table (11)** indicate an improvement percentage between (prior / post) measurement for the experimental group in the variables subject matter of the research for the favor of the post measurement, whereas the improvement percentage ranged between (9.2%m 74.8%), which indicates that the training program proposed with using core stability trainings established by the researcher have led to the development of physical variables subject matter of the research and that the use of the different from the usual in the stability training using some tools has added principle of variety and change as one of the athletic training principles and basics, as it will remove monotony and boredom and increases the motivation of players to exert effort in the performance of their training units, and this leads to the maximum benefit from training, whereas **Musa Fahmy, Adel Ali (1994)** states that the purpose of the trainings put in place is to prepare specific muscle groups to suit the skills of the activity type, that is, it work to develop the muscles working in the skill with an interest in technical aspects side by side and often these trainings are difficult and complex. (24: 93)

These results agree with the study **of Ahmed Mostafa El-Sayed (2019) (4), Belal Morsi Witwit (2018) (13), Dina Metwally Ahmed (2018) (18), Nashwa Mohamed Refaat (2017) (33), Nashwa Mohamed Refaat (2017) (34), Majd Aziz wanoos (2015) (25), Ali Muhammad Hassouna (2012) (10), Hussain Ali Abdul Salam (2012) (21), Byars & Others (2011) (15), Saeterbakken & Others (2011), (35), and Ali Al-Saeed Rayhan (1998) (8).**

It is indicated from **table (9)** that there as differences with statistical indications between (prior / post) measurement for the control group in the tests subject matter of the researcher, whereas the calculated (T) value ranged for the maximum motor strength tests for straight abdominal muscles with core bending weight machine (12.475), maximum motor strength for right tilted abdominal muscles with core bending machine (9.025), maximum motor strength for left tilted abdominal muscles with core bending machine (9.539), maximum motor strength for back muscles with back stretching weight machine (12.475), constant maximum strength for back muscles by using dynamometer (4.731), constant maximum strength for leg muscles by using dynamometer (12.911), maximum constant strength for right fist by using manometer (2.972), maximum constant strength for left fist by using manometer (20.494), strength endurance for inclined flattening with parts distancing (14.325), strength endurance for flattening inclined to the right side (19.92), strength endurance for flattening inclined to the left side (18.307), vertical flexibility (14), defense effectiveness against waist turnover (16), which are values bigger than (T) table value, which

was (1,761) at freedom degree (14), which indicates that the traditional training program by using core stability training has affected these physical variables due to continuance in training.

The results of **table (12)** indicate an improvement percentage between (prior / post) measurement for the control group in the physical variables subject matter of the research for the favor of post measurement, whereas the improvement percentage ranged between (2.5% and 35.5%).

The researcher attributes these differences and this progress that the traditional training program has led to improvement in the variables subject of matter of the research for the control group and this is due to the regularity of players and their commitment to training and repeating the training performance, which in turn led to improving the variables subject matter of the research and transference of training impact, whereas **Adel Abdul-Basir (1999)** mentions that the adaptation process in training can only continue and develop through constant training. (3: 72)

James, P, M, M (1996) confirms, whereas he indicates that the regular training helps the internal muscles on adopting with any new work, which lead to increasing the player functional ability. (23: 85)

It is indicated from **table (10)** that there are differences with statistical indications between (experimental / control) groups in the post measurement in the physical variables subject matter of the research in the favor of the experimental group, whereas the calculated (T) value was bigger than bigger than table (T) value at moral level (0.05), which was (1.701) at (28) freedom degree, whereas the calculated (T) value ranged for maximum motor strength tests for straight abdominal muscles with core bending weight machine (2.435), maximum motor strength for right tilted abdominal muscles with core bending machine (3.775), maximum motor strength for left tilted abdominal muscles with core bending machine (7.32), maximum motor strength for back muscles with back stretching weight machine (5.809), constant maximum strength for back muscles by using dynamometer (2.561), constant maximum strength for leg muscles by using dynamometer (4.648), maximum constant strength for right fist by using manometer (4.127), maximum constant strength for left fist by using manometer (3.447), strength endurance for inclined flattening with parts distancing (26.709), strength endurance for flattening inclined to the right side (87.381), strength endurance for flattening inclined to the left side (62.329), vertical flexibility (4.106), defense effectiveness against waist turnover (5.241). This is largely due to the effectiveness of the impact of the proposed training program using the core stability training developed by the researcher. These results also indirectly confirm the validity and formation of training loads within the used training program in accordance with muscle work technique, in addition to the soundness of choosing the used programs and paying attention to the validity and speed of its performance, whereas **Mohamed Hassan Allawi and Abu El-Ela Abdel Fattah (2000)** confirm that the development and mastering the motor skills related to the kind of sport activity is closely associated with the development of necessary physical abilities associated with these skills. (27: 80)

These results are supported by the improvement percentage, whereas the results of **table (11) and (12)** to the difference between the improvement percentage, which occurred in the level between the proposed program and traditional program.

The researcher sees that these differences and improvement percentages for the experimental groups return to the proposed training program, which consists of core stability trainings, which was applied on the experimental group and contains special stability

trainings, which are similar in it muscle work with the working muscles and requirements of skill performance and in the same motor course and due to that the only difference between the two groups is the core stability training, as the researcher attributes to the superiority of the experimental group over the control group in the physical variables subject matter of the research to core stability trainings, which were applied on the experimental group.

Also core stability trainings, which concentrated on the individual performance and were featured with variety, suspense, and motivation towards performance, have impacted the skill performance and led to positive impact on defense effectiveness against waist turnover for the experimental group.

Whereas these results are consistent with **Ali Al-Saeed Rayhan (1994) (9)** quoting German and Hanley that the wrestler needs high levels of muscle strength, so he would be able to perform skills on proper manner with high efficiency.

Issam Abdel-Khalek (2003) asserts that mastery of skill performance depends on the extent of developing the requirements of this performance from special physical abilities and the skill performance level is mostly measured with the extent of the individual acquisition to these special physical features. (22: 171)

Al-Saeed Rayhan (2006) also mentions that he prefers to give trainings the works in the same direction as the muscle work for skills. (7: 146)

Dave Schmitz (2003) indicates that the concentration on center muscle group with core stability straining, which help on linking the lower part with the upper part, which are abdominal muscles, spine muscles, and side muscles, in addition to preventing strength leak and using all part with alternating way and integrative movement in the body sensitivity and integration, specific activity, and the achievement of that requires understanding the nature and requirements of performed sports activity and through understanding the performance requirements, we determine the trainings and resistors to fulfil these needs and specific speed related to the activity practice. (17: 3-5)

Whereas that agrees with what mentioned by **Chabut, L (2009)** that the proper training by using core stability trainings leads all muscles existing therein to work together and execute more powerful and effective movements, as well as more balanced body and stretched internal and external muscles with proper control in parts. (16: 29)

As for the improvement of defense effectiveness against waist turnover, the researcher attributes to core stability trainings, whereas the mastery in skills will only be achieved through the development of physical performance requirements, whereas the skill performance improves with the improvement of physical abilities.

These results agree with the study **of Ahmed Mostafa El-Sayed (2019) (4), Belal Morsi Witwit (2018) (13), Dina Metwally Ahmed (2018) (18), Nashwa Mohamed Refaat (2017) (33), Nashwa Mohamed Refaat (2017) (34), Majd Aziz wanoos (2015) (25), Ali Muhammad Hassouna (2012) (10), Hussain Ali Abdul Salam (2012) (21), Byars & Others (2011) (15), Saeterbakken & Others (2011), (35), and Ali Al-Saeed Rayhan (1998) (8).**

That was agrees with privacy principle, as well as considering the individual differences for each player, whereas **Abdulaziz Al-Nimr & Nariman Al-Khatib (2005)** mention that the performance improves in a better way, if the training was related to the kind of practiced activity and includes the most important working muscles in this activity and to be made in the same way used in competition. (1: 188)

From the above, we find that the proposed training program and applied on the experimental group, which contains core stability trainings for the center muscles in muscle work direction, as the muscle work is similar with the motor course, as it has a positive impact on the development of physical variables and defense efficiency against waist turnover and **thereby the research assumptions are achieved.**

Conclusions:

In light of the objectives and nature of this study and within the limits of research sample and used method, as well as from the acts of data, which was compiled for the research and results of statistical analysis, the researcher reached the following conclusions.

1. The proposed training program by using core stability training has more positive impact on the development of physical variables subject matter of the research for the experimental group.
2. The proposed training program by using core stability training has more positive impact on the effectives of defense against waist turnover for the experimental group.
3. The proposed training program by using core stability training is better than the traditional program on defense efficiency against waist turnover for the experimental group.

Recommendations:

Within the limits of procedures included by the study and its results, the researcher recommends the following:

1- Paying attention to the trainings directed in the direction of courses and motor positions for different wrestling skills.
2- Paying attention to core stability trainings during the program of preparing the wrestlers to increase strength levels in accordance with the scientific basis and increasing the ability on effective fighting during matches.
3- Paying attention to strengthening core muscles through stability trainings, whereas the movement is transferred from the lower part to the upper part, as well as preventing strength leak, as it works on making balance between the two parts and dysfunction in the center area will impact skill and physical performance.
4- Paying attention to the refinement of trainers through holding training courses for them and introducing the trainers to modern training techniques.
5- The necessity of designing similar programs to the different age groups.
6- The necessity of designing similar program by using core stability trainings in order to develop different technical skills performance strength in changing fighting positions.
7- The necessity of diversification in using means, tools, and devices upon the application of core stability trainings.

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