The effect of insanity training on the level of performance for back handspring skill on the floor device

*** Prof. Dr. Manal Ahmed Amin**

***professor of rhythmic Exercise trainingand Head of the Department of Exercise, Gymnastics and dance at the Faculty of Physical Education, Minya University.**

**** Prof. Nasser Omar Al-Waseef**

**** professor Methods of teaching gymnastics in the Department of Exercises, Gymnastics and dance at the Faculty of Physical Education, Minya University.**

***** Prof. Dr. Ahmed Mahmoud Hassan**

***** professor Assistant at the Department of Exercise, Gymnastics and dance at the Faculty of Physical Education, Minya University.**

****** Eng. Abdullah Mohamed Saad Al-Ansary**

****** Assistant Teacher Department of Exercises, Gymnastics and dance at the Faculty of Physical Education, Minya University.**

Introduction and problem of research:

One of the most important features of the modern era is the progress and scientific development in all scientific fields, which has led many researchers to subject all possibilities to scientific research and modern sports training theories that have advanced rapidly in order to raise the level of sports achievement, especially the tremendous development in the level of difficulties in the field of gymnastics.

Recently, a modern style of training methods followed and innovative by fitness expert Shaun T" has appeared, it is insanity training, which is based on training all parts of the body for two months and this method is one of the most violent and severe modern training methods that have been designed over several years of academic study, and this training method contains many strenuous exercises, rotational strength exercises, resistance exercises, stretching exercises and many essential exercises that It pushes the limited possibilities to bring out amazing results over a two-month period of time (25).

It also works to train the whole body and can be done anywhere without sports equipment or gyms and can use different weights for resistance, and insanity training is very important and effective as it works to raise the physical fitness of the individual and burn a large

amount of fat. it helps to lose weight and get muscle mass strengthened by training, and in this type of training we find that the heart rate of the heart rate reaches its maximum and depends on the intensity of what ranges Between 70:80% of the maximum intensity of training (24).

Insanity training is one of the modern training methods that rely on high-intensity training with very short breaks that are almost non-existent and works to develop the elements of strength, balance, ability, compatibility, anaerobic endurance, speed and agility in a short time, as it is one of the best and fastest modern training methods to develop the elements of physical fitness quickly, provided that we continue training so that we can develop training programs that contribute to the growth and development of physical fitness(25).

Mohamed Shehata (2003) states that skills are characterized by the constant change of motor requirements on the player that appeared as a result of the development of gymnastics, which requires the player to reshape the skills he has learned and learn new motor skills and therefore requires special physical preparation so that the player can accomplish new motor duties which is well suited to the development of the physical qualities of these skills (13:245).

Mervat Ahmed Kamal (2003) points out that the floor device is one of the most exciting and exciting gymnastics devices because of the acrobatic skills contained in the range of floor such as the forward and back handspring is installed in a harmonious form performed during a specific period of time, and the skills performed on this device are one of the basic skills that the trainer relies on in developing the level of performance on other devices (18: 13).

Through the experience of researchers in teaching gymnastics courses at the Faculty of Physical Education, Minya University, they have noticed a decrease in the level of performance of the skill of the back handspring on the device of floor for students of the fourth division specializing in gymnastics, and also noticed the reluctance of some students to perform the skill and learn it as a result of injuries during the training of the skill as a result of poor physical level, and because education and training has become dependent on modern and non-traditional methods to ensure reaching the highest levels and develop solutions to the difficulties they face. Students during training in learning and mastering technical skills, so the researchers found the link between the physical aspects and skill performance through the use of modern exercises such as insanity training in developing the level of performance of the skill under research for students of the specialty of gymnastics, and

within the limits of the researchers' knowledge and in the light of what he did from surveying many references and studies that they were able to obtain, the researchers did not find a study that dealt with the impact of insanity training on the development of the level of performance of the skill of the back handspring on the device of floor For students of the Faculty of Physical Education, the researchers were prompted to do this research.

Research Objective:

This research aims to find out the effect of insanity training on:

1- Some physical variables (speed - muscular ability of the legs - explosive strength of the arms- agility - flexibility) related to the skill of the back handspring on the device of floor.
2 - The level of performance of the skill of the back handspring on the hands on the device of floor.

Research Assignments:

In light of the research objective, the researchers assume the following:

1- There are statistically significant differences between the average scores of the pre- and post-measurements of the experimental group in the physical variables of the skill of the back handspring on the device of floor.
2. There are statistically significant differences between the average scores of the pre- and post-measurements of the experimental group in the level of performance of the back handspring skill on the floor device.

Search terms:

Insanity:

"It is one of the modern training methods that relies on high-intensity training with very short breaks that are almost non-existent and serves to develop the elements of strength, balance, ability, compatibility, anaerobic endurance, speed and agility in a short time".26

Insanity (procedural definition):

"They are highly intense and low-intensity workouts that develop fitness elements and increase heart efficiency through severity, strength and resistance to fatigue."

Research Plan and Procedures:

Research Methodology:

According to the nature of the research problem and in order to achieve its objectives and test its hypotheses, the researchers used the experimental approach using the experimental design of one experimental group by means of pre- and post-measurement.

Research Community:

The research community is represented by the students of the fourth group of boys in the Department of Exercises, Gymnastics and dance, Faculty of Physical Education, Minya University for the academic year 2020/2021, which total (20) students.

Sample Research:

The research sample was selected by the deliberate method from the research community, where the basic research sample included the specialization of gymnastics for boys and their number (12) students as an experimental group, and the sample of the survey study from the students of the specialization of exercises and the number of (8) students.

Moderation of the frequency distribution of the research sample:

The researchers found the moderation of the distribution of the members of the research sample in the light of the following variables: growth rates, physical variables, and the skill under research, and the two tables (1, 2) illustrate this:

TABLE (1)

ARITHMETIC AVERAGE, MEDIAN, STANDARD DEVIATION, TWISTING COEFFICIENT OF GROWTH RATES AND VARIABLES PHYSICAL AND SKILL UNDER RESEARCH FOR THE BASIC AND EXPLORATORY RESEARCH SAMPLE (N=20)

Variables		Unit of Measurement	Average	Medain	Standard deviation	Torsion coefficient
Growth rates	Age	year	21.03	20.90	0.60	0.65
	Length	poison	172.85	173.00	3.25	- 0.14
	Weight	kg	69.41	68.40	5.68	0.53
Physical variables	30m sprint from high start	second	5.08	5.08	0.32	0.00
	Wide jump of stability	poison	182.55	184.00	8.91	- 0.49
	Push up on a parallel device	number	15.65	16.00	2.62	- 0.40
	Oblique Prostration of Standing(10s)	number	5.15	5.00	0.81	0.56
	Bend the torso forward from standing	poison	24.43	24.50	3.38	- 0.06
Skill variables	Back handspring on the floor device	degree	5.93	5.25	1.31	1.53

It is clear fromTable 1 that:

The values of the torsion coefficients of growth rates, physical variables and skill under consideration for the basic and exploratory research sample ranged between (-0.49: 1.53) and all of them are limited to (± 3), which indicates the moderation of the distribution of the basic and exploratory research sample in those variables.

TABLE (2)

ARITHMETIC AVERAGE, MEDIAN, STANDARD DEVIATION, TWISTING COEFFICIENT OF GROWTH RATES AND VARIABLES PHYSICAL AND SKILL UNDER RESEARCH FOR THE BASIC RESEARCH SAMPLE (N=12)

Variables		Unit of Measurement	Average	Medain	Standard deviation	Torsion coefficient
Growth rates	Age	Year	21.18	21.25	0.63	-0.33
	Length	Poison	173.42	173.00	3.40	0.37
	Weight	Kg	68.89	68.40	5.81	0.25
Physical variables	30m sprint from high start	Second	5.14	5.10	0.28	0.43
	Wide jump of stability	Poison	182.17	184.00	9.12	-0.60
	Push up on a parallel device	Number	16.00	16.00	2.37	0.00
	Oblique Prostration of Standing(10s)	Number	5.25	5.00	0.75	1.00
	Bend the torso forward from standing	Poison	24.54	24.50	3.39	0.04
Skill variables	back handspring on the floor device	Degree	5.63	5.00	1.36	1.39

Table 2 shows the following:

The values of the torsion coefficients of growth rates, physical variables and skill under consideration for the basic and exploratory research sample ranged between (-0.60: 1.39) and all of them are limited to (± 3), which indicates the moderation of the distribution of the basic research sample in those variables.

Data collection tools:

1- Devices and tools used in the research:

- ✓ Restamameter device to measure height.
- ✓ Medical scale to measure weight.
- ✓ Tape measure and adhesive tapes.
- ✓ Swedish seats.
- ✓ Flexible box.
- ✓ It's spongy.
- ✓ Floor Device

2- Forms used in the research:

A. Data Collection Forms Appendix (5)

- ✓ A form for recording the personal data of students.
- ✓ A form to record the results of physical measurements.
- ✓ A form to record the results of the skill level assessment.

B- Expert Opinion Survey Form:

- ✓ Expert survey form to identify the most important physical variables associated with the skill of the back handspring on the device of floor Appendix (2).
- ✓ Expert Opinion Survey Form to Identify the Most Important Physical Tests Appendix (3).
- ✓ Expert Opinion Survey Form to determine the data for the training program Appendix (4).

Tests used in research: Appendix(6)

Through the researchers' access to specialized references in tests such as "Kamal Abdel Hamid" (2016)(11), "Mahmoud Ismail" (2015)(15), "Mustafa Hussein, Ahmed Kamal, Mokhtar Amin" (2013)(17), "Leila Al-Sayed" (2012)(12), "Mohammed Sobhi" (2004) (14), and the Expert Opinion Survey Appendix (3) on identifying physical tests that measure the physical variables of the skill under research , where the various references indicated its importance for the skill under research, where these tests were applied to the members of the survey group to determine their suitability for application during the conduct of the basic study and these tests were represented in the following:

- ✓ Test " 30m sprint from high start ": to measure the transition speed and its second unit of measurement.
- ✓ " Wide jump of stability " test: to measure the muscular ability of the two men and its unit of measurement centimeters.

- ✓ Test " Push up on a parallel device ": to measure the muscular strength of the arms and the unit of measurement of the number.
- ✓ Test " Oblique Prone of Standing(10W)": to measure agility and unit of measure.
- ✓ Test " Bend the trunk forward from standing ": to measure the elasticity and unit of measurement of centimeters.

Scientific Parameters of Physical Tests under Research:

The researchers calculated the scientific transactions of honesty and stability of the physical tests under research in the period from Sunday 21/2/2021 to Wednesday 24/2/2021 as follows:

Honesty:

The sincerity of the physical tests under research was calculated by the sincerity of differentiation, on a similar survey sample of the research community and from outside the basic research sample, where their number reached (8) eight students by (4) four distinguished students, (4) four non-distinguished students, and the significance of the differences between them was calculated in the tests, andtable (3) shows the result .

TABLE (3)
SIGNIFICANCE OF THE DIFFERENCES BETWEEN DISTINGUISHED AND NON-DISTINGUISHED STUDENTS IN THE PHYSICAL TESTS UNDER CONSIDERATION (N=8)

Physical variables	Unit of Measur-ement	Premium group (n=4)		Undifferentiated group (n=4)		In the	In	Z value	Probabi-lity of error
		Avera-ge Ranks	Total Ranks	Average Ranks	Total Ranks				
30m sprint from high start	second	2.50	10.00	6.50	26.00	0.00	10.50	2.31	0.02
Wide jump of stability	poison	6.50	26.00	2.50	10.00	0.00	10.00	2.31	0.02
Push up on a parallel device	number	6.50	26.00	2.50	10.00	0.00	10.00	2.34	0.02
Oblique Prostration of Standing(10s)	number	6.38	25.50	2.63	10.50	0.50	10.50	2.29	0.02
Bend the torso forward from standing	poison	6.50	26.00	2.50	10.00	0.00	10.00	2.32	0.02

Table (3) shows the following:

There are statistically significant differences between distinguished students and non-distinguished students in tests that measure the physical variables under research and in the direction of distinguished students, as all the values of the probability of error are smaller than the level of significance (0.05), which indicates the sincerity of the tests and their ability to distinguish between groups.

Stability:

To calculate the stability of tests that measure the physical variables under research, the researchers used the method of applying the test and reapplying it to a sample of (8) eight students from outside the research sample and have the same specifications as the basic sample and an interval of (3) three days between application and reapplication, and table (4) shows the correlation coefficients between the two applications.

TABLE (4)
CORRELATION COEFFICIENTS BETWEEN APPLICATION AND RE-APPLICATION OF PHYSICAL TESTS UNDER RESEARCH (N=8)

Physical variables	Unit of Measurement	Application		Reapply		T value
		average	Standard deviation	average	Standard deviation	
30m sprint from high start	second	5.03	0.37	4.96	0.38	0.93
Wide jump of stability	poison	183.13	9.16	179.25	12.14	0.99
Push up on a parallel device	number	15.13	3.04	15.88	3.52	0.99
Oblique Prostration of Standing(10s)	number	5.00	0.93	4.75	0.89	0.87
Bend the torso forward from standing	poison	24.25	3.58	25.13	4.22	0.99

Tabular at degree of freedom (6) and significance level (0.01) = 0.83.

Table 4 shows the following:

The correlation coefficients between the application and the re-application of the physical tests under consideration ranged between (0.87: 0.99), which are statistically significant correlation coefficients where the calculated value of (t) is greater than the tabular value of (t) at the level of significance (0.01), which indicates the stability of those tests.

Evaluation of the level of performance of the skill of the back handspring on the device of floor :

Where the level of skill performance of the skill of the back handspring on the device of floor under research was evaluated for the research sample by a committee consisting of three arbitrators from experts IN THE FIELD OF GYMNASTICS AND FROM THE FACULTY MEMBERS OF THE FACULTY OF PHYSICAL EDUCATION and have experience of at least (10) ten years APPENDIX (1) and they set the grades for each student separately and the grade was calculated based on the average grades of the arbitrators for each student and the final grade was determined from (10) grades.

Scientific parameters to assess the level of performance of the skill of the back handspring on the device of floor:

The researchers calculated the scientific transactions of honesty and stability to assess the level of performance of the skill of the back handspring on the device of floor under research in the period from Sunday 21/2/2021 to Wednesday 24/2/2021 as follows:

Honesty:

The sincerity of the evaluation of the skill level of the skill of the back handspring on the device of floor under research was calculated by the sincerity of differentiation, on a similar survey sample to the research community and from outside the basic research sample, where their number reached (8) eight students by (4) four distinguished students, (4) four non-distinguished students, and the significance of the differences between them in the skill under research was calculated, and table (5) shows the result.

TABLE (5)
THE SIGNIFICANCE OF THE DIFFERENCES BETWEEN DISTINGUISHED AND NON-DISTINGUISHED STUDENTS IN THE ASSESSMENT OF THE SKILL LEVEL of skill back handspring on the device of the floor under research (N=8)

Skill variables	Unit of Measurement	Premium group (n=4)		Undifferentiated group (n=4)		In the	In	Z value	Probab-ility of error
		Average Ranks	Total Ranks	Average Ranks	Total Ranks				
back handspring on floor device	degree	6.50	26.00	2.50	10.00	0.00	10.00	2.34	0.02

Table (5) shows the following:

There are statistically significant differences between distinguished and non-distinguished students in the assessment of the skill level of the skill of the back handspring skill on the floor device under research and in the direction of the distinguished students, as the value of the probability of error is smaller than the level of significance (0.05), which indicates the sincerity of the assessment of the skill level and its ability to distinguish between groups.

Stability:

To calculate the stability of the evaluation of the skill level of the skill of the back handspring on the device of floor under research, the researchers used the method of applying the test and reapplying it to a sample of (8) eight students from outside the research sample and have the same specifications as the basic sample and with a time interval of (3) days between the application and the reapplication, and table (6) shows the correlation coefficients between the two applications.

TABLE (6)

CORRELATION COEFFICIENT BETWEEN APPLICATION AND REAPPLICATION IN THE SKILL level of back handspring skill on the device OF THE FLOOR UNDER SEARCH (N=8)

Skill variables	Unit of Measurement	Application		Reapply		T value
		average	on	average	on	
back handspring on floor device	degree	6.38	1.16	6.56	1.32	0.99

The tabular value of t is at the degree of freedom (6) and the level of significance (0.01) = 0.83.

It is clear from Table (6) the following :

The correlation coefficient between the application and the re-application to evaluate the level of performance of the skill of the back handspring on the device of floor under research (0.99) which is a statistically significant correlation coefficient as the calculated value of (t) is greater than the value of (t) tabular at the level of significance (0.01), which indicates the stability of the form.

Executive steps of the research:

Exploratory study:

The researchers conducted a survey study from Sunday 21/2/2021 to Wednesday 24/2/2021 on a sample of (8) eight students from the same research community and from outside the basic research sample, in order to identify the suitability of the training program under research for the research sample, and to identify the safety of the tools and tests used and the implementation of some programming exercises and the results of the survey studies resulted in their correctness and suitability of the tests used as well as the safety of the tools.

Tribal measurement:

The researchers conducted the tribal measurement of the sample under research in the physical variables and the skill level of the skill of the back handspring on the floor under research on Sunday, **28/2/2021.**

Application of the program:

The researchers applied the training program to the experimental sample under research, using the insanity training, where it took a period of (8) eight weeks in the period from Tuesday 2/3/2021 to Sunday 25/**4/2021** and consists of (24) training units by (3) units per week on Sunday, Tuesday and Thursday, where the researchers in that period implemented the training program under research Appendix (8) to the experimental group.

dimensional measurement:

After the end of the specified period for the implementation of the program, the researchers performed the dimensional measurement of the sample under research in the physical variables and the skill level of the skill of the back handspring on the device of floor under research on Tuesday, 27/**4/2021**.

Statistical method used:

In light of the objectives and hypotheses of the research, the researchers used the following statistical methods:

"Arithmetic mean - median - standard deviation - torsion coefficient - Man Whitney nonbarometric test - correlation coefficient - Wilkson nonbarometric test - percentage of change rate" The researchers satisfied a level of significance at (0.01), (0.05) The researchers also used the statistical program SPSS to calculate some statistical coefficients and the writing of numbers after the decimal point was coordinated with two numbers.

View and discuss the results:

First: Presentation of Results:

Table (8)

Significance of differences between the mean scores of the pre- and post-measurements of the experimental group in some variables Physical research by Wilcoxon abarometics method (n = 12)

Physical variables		Measurement Module	Tribal measurement			Telemetry			(Z) value
			Arithmetic average	Average Ranks	Total Ranks	Arithmetic average	Average Ranks	Total Ranks	
speed	30m sprint from high start	second	5.14	0.00	0.00	4.19	6.50	78.00	3.06
Muscle strength of the legs	Wide jump of stability	poison	182.17	6.50	78.00	229.00	0.00	0.00	3.06
Muscle strength of the arms	Push up on a parallel device	number	16.00	6.50	78.00	22.00	0.00	0.00	3.08
Agility	Oblique Prostration of Standing(10s)	number	5.25	5.50	55.00	7.17	0.00	0.00	2.87
Flexibility	Bend the torso forward from standing	poison	24.54	6.50	78.00	28.17	0.00	0.00	3.08

Table (8) shows the following:

The existence of statistically significant differences between the pre- and post-measurements of the experimental group in some of the physical variables under research and in the direction of the dimensional measurement where all the values of the probability of error are smaller than the level of significance (0.05).

Table (9)

Significance of the differences between the average scores of the pre- and post-measurements of the experimental group in the skill level of the volatility skill Background on the device of floor in the Wilcoxon apartanthric method (n = 12)

Skill variables	Unit of Measurement	Tribal measurement			Telemetry			(Z) value
		Arithmetic average	Average Ranks	Total Ranks	Arithmetic average	Average Ranks	Total Ranks	
back handspring on floor device	degree	5.63	6.50	78.00	8.63	0.00	0.00	3.07

Table 9 shows **the following:**

The existence of statistically significant differences between the pre- and post-measurements of the experimental group in the level of performance of the skill of the back handspring on the device of floor and in the direction of telemetry where the value of the probability of error is smaller than the level of significance (0.05).

Table (10)

Rates of percentage change for posterior measurements from pre-emptive for the experimental group in physical variables and the skill of the back **handspring on the device of floor under research (n = 12)**

Physical and skill variables		Unit of Measurement	Average Pre-Measurement	Average telemetry	M1 – M2	Percentage Change Rates%
speed	30m sprint from high start	second	5.14	4.19	0.95	18.48 %
Muscle strength of the legs	Wide jump of stability	poison	182.17	229.00	46.83	25.70 %
Muscle strength of the arms	Push up on a parallel device	number	16.00	22.00	6.00	37.5 %
Agility	Oblique Prostration of Standing(10s)	number	5.25	7.17	1.92	36.57 %
Flexibility	Bend the torso forward from standing	poison	24.54	28.17	3.63	14.79 %
back handspring on floor device		degree	5.63	8.63	3.00	53.29 %

Table (10) shows the following:

The rates of percentage change of the post-measurements from the pre-experimental group in the physical variables and the skill of the back handspring on the device of the floor under research ranged between (53.29%: 14.79%) and in the direction of the dimensional measurements, which indicates the positive impact of the training program in the physical variables and the skill of the back handspring on the device of floor under research and in the direction of telemetry, which indicates the positive impact of the training program under research.

Second: Discussion of the results:

Table (8) shows that there are statistically significant differences between the pre- and post-measurements of the experimental group in the physical variables under research and in the direction of the dimensional measurement where all the values of the probability of error are smaller than the level of significance (0.05), and these differences indicate the level of development in the physical variables under research.

The researchers attribute the change and improvement in the physical variables to the regularity of the sample members in the training as well as to the effectiveness of the training program designed and implemented by the researchers, where the program included the insanity training that being high intensity in the development of the physical variables under research, the use of which led to the development of those variables positively.

The researchers attributed the improvement in transition speed – muscular ability – explosive strength – agility – flexibility to the use of the insanity training under research, which included "Plyometric Lengthening" exercises, namely Shaun T - Insanity Plyometric Cardio Circuit, Core Speed and Dynamic Core Core Training. Pyramid insanity training, Swedish cardio speed and total body circuit insanity, directed to heart function, motor speed, reflexes and trunk area exercises (core). Which is one of the most important areas of power transfer between the lower end of the upper end and vice versa and which is of great importance in reducing the loss of power at that stage and achieving the desired goal.

This is consistent with what **Schmitz** (2003)(21), **Tim bacon et al (233),** Abdullah **Mohammed (2019**) pointed out that one of the most important features of functional strength training that included the insanity training under research is the focus on the group of center muscles (abdominal and back muscles) where the strong center muscles

connect the lower limb to the upper limb in addition to preventing the leakage of strength, making it one of the best exercises used in improving the strength of the center muscles and balance, and it also offers Multi-level meaning performing sports movements in more than one direction and not limiting the exercise to one direction only, the insanity body is designed and has the ability to move directly forward, backward, left and right and also rotate and round, it must improve this ability by focusing on the three dimensions of movement (horizontal - arrow - vertical) and help to perform multiple joints as the player spends a lot of time against the effects of gravity so you must focus on the main fixation muscles located in the center Against resistances, which affect balance, especially during the performance of skills, which need a great degree of balance, stability and control of the counter-balance, where multi-directional movements require balance and here not only requires strong muscles for the center but sufficient skill and compatibility of performance and dynamic exercises are practiced to balance with or without a maximum counterbalance and this is what was taken into account by researchers in the selection of designed insanity exercises under research.

As well as good planning of those exercises and the rationing of training loads in a scientific manner appropriate to the sample under research and training with gradual loads by gradually increasing the loads and training the different muscle groups, especially the muscles of the arms, legs, torso and all the muscles of the body, most of the exercises focused on the muscle groups working during the performance in the skill of back handspring, as this led to increasing the explosive force as high as possible, which is considered the basis and one of the special, main and basic physical abilities required by performance in gymnastics In most of its skills, the researchers believe that the nature of gymnastics mainly requires the availability of the characteristic of explosive strength,

whether for the two legs, arms, abdomen, back or torso, as they are important and crucial in the performance of the skills of front and back handspring s, all of which depend on the explosive power of the legs and arms, agility, flexibility and speed of performance, which it requires to mobilize energy to move the weight of the body up, forward or backward to perform those skills.

The researchers believe that the use of insanity "lengthening and shortening" Plyometric training in a proper and regular way led to reducing the time of contraction of muscle fibers and improving compatibility between the working muscles and the corresponding muscles and the results of this study are consistent with the study "**Shaimaa Al-Sayed" 2019 (5), "Adel Jalal et al." 2019 (7)** which showed that the use of Plyometric stretching and shortening exercises By reducing the time of muscle contraction and the time of contact of feet with the floor, positive results are given in tests of explosive strength of the arms and legs, and this is evident in the insanity training used under research, and this is consistent with what Henson stated in 1996 (20) that decentralized contraction must be immediately followed by a central contraction to obtain through it a high contractile capacity productivity.

The researchers also attribute the improvement and strong effect of insanity plyometric exercises and lengthening and shortening exercises to the fact that these exercises work to the occurrence of involuntary lengthening of the material muscles of the joints, which would generate involuntary muscle contraction that works to excite other sensory organs and thus increase the number of motor units in the muscles working on these joints, which are necessary to increase muscle capacity.

It is noted from Table (8) that there has been a noticeable and strong improvement in transition speed – muscular ability – explosive power – agility – flexibility and the result of the above is in line with the

study of "Ahmed Mahmoud" 2020 (3), "Ali Nour" (2019)(10), "Marwa Medhat" 2018(16)"Ayman Nasser" (2017)(4), that agility can be developed through the development of associated physical abilities especially strength, muscular ability and speed, This is consistent with Samir **Ahmed 2019**(2).

This is in line with what **Wajda Mustafa, Mohammed Lotfy (2002) (19)** pointed out that agility is the ability of an individual to change his position on the ground or in the air and perform movements in different directions as far as the individual can of the efficiency and speed of the player in changing the position of his body and changing his direction along with the ability of the player to act in the achievement of the technique of sports skills with the highest possible efficiency and all of the above is consistent with what is present in the training program and in the training of the insanity being in various situations The forms used, whether directed to the ability of the two men or arms, speed or agility of the trunk area or to the balance and compatibility of the entire body parts or as the researchers see it as a suitable climate for the development of most of the physical abilities of gymnastics and the results of that study in the effectiveness of insanity training in improving most of the physical and physiological variables are consistent with the results of both and consistent with the studies of (**Ayman Nasser Mustafa 2017) and (2019Brian Kliszczewicz et all).**

As Tim bacon et al " 2006 (23), Schmitz " 2003 (21) adds that functional training is a training that simulates reality, functional training gives better balance and muscle control during various movements, it also works to achieve balance and control during movement, it is a training in which the individual exercises movement against resistance with the goal of improving the ability of the participant to perform a certain sports activity and thus achieves dynamic balance dynamically, and it also

stimulates the neuromuscular system That is, it activates both muscle fibers and the nervous system so that slow fibers behave the same as fast fibers, moreover the resistance to training works to excite motor neurons and thus leads to improved muscle response leading to improved skill performance.

It is also clear from Table (10) that the rates of percentage change of the measurements after the tribal of the experimental group in the physical variables under research ranged between (14.79% : 37.5%) and in the direction of dimensional measurements, which the researchers attribute to the clear positive impact achieved by the training program using insanity training on the development of the physical variables under research, which confirms the effectiveness of the proposed program and its influential results from the use of those trainings, which work on the development of variables The physique under research is positively consistent with what has been indicated by several studies such as "Ahmed Mahmoud" (2020)(3), "Shaimaa Al-Sayed" (2019)(5), "Shaimaa Faraj" (2019)(6), "Adel Jalal et al." (2019)(7), "Ali Nour" (2019)(**10), Marwa Medhat (2019)(16), Ayman Nasser (2017)(4)** whose results resulted in a rate of improvement in physical variables as a result of the use of insanity training.

Thus, the first hypothesis, which indicates that "there are statistically significant differences between the average scores of the pre- and post-measurements of the experimental group in some of the physical variables under **consideration in favor of telemetry".**

It is clear from Table (9) that there are statistically significant differences between the pre- and post-measurements of the experimental group in the level of performance of the back handspring skill on the floor device and in the direction of telemetry where the value of the probability of error is smaller than the level of significance (0.05). The researchers attribute the development in the level of performance of the skill of the back handspring on the device of floor under research to the training program using insanity training, where it led to raising the efficiency of the physical abilities of the students, where the training of the insanity being led to an increase in the ability of the human The legs and the strength of the arms and also the increase in the level of agility

and flexibility in the research sample, which reflected positively on the level of performance of the skill under research, and this is consistent with what was stated by **both "Adel Abdel Basir" (1999)(8), "Ahmed Al-Hadi" (2016)(1),** that physical preparation is closely related to the skill preparation as there is a positive direct relationship between them, the higher the physical level of the players and the better their physical fitness, the greater their ability to learn and master the technical performance of motor skills (13): 211) (1: 257).

Ahmed Al-Hadi (2016) (1) **also states** in this regard that gymnastics skills require a great deal of physical abilities to help the player to perform because of the difficulty in gymnastics skills and as the level of performance of the player for the skill depends on his **possession** of special motor abilities, and coaches must link the performance of the skilled player to the special physical preparation that is the cornerstone of gymnastics.

Starosta (1998) (22) also points out that when a player tries to improve his skill level, he should combine both variables and physical qualities with the performance of different skills, forming an integrated format that works to raise the performance of motor skills through **the** improvement of the physical level. The physical condition of the player which led to a rise in the skill and motor outcome of the player and in turn led to the improvement of the skill level of the skill under research and this is consistent with what was mentioned by "Ahmed Mahmoud" (2020)(3), "Shaimaa Al-Sayed" (2019)(5), "Shaimaa Faraj" (2019)(6), "Adel Jalal et al." (2019)(7), "Ali Nour" (2019)(**10), Marwa Medhat (2019)(16), Ayman Nasser (2017)(4).**

As can be seen from Table (10) that the average percentage change of the distance measurement from the pre-test group in the skill of the back handspring on the device of floor under research (53.29%) and in the direction of telemetry, which indicates the positive effect of the training program in the skill under research, and the researchers attribute this result to the clear positive impact achieved by the training program using insanity training on the development of the skill of the back handspring on the device of floor.

The second hypothesis is thus realized, which indicates that "there are statistically significant differences between the average scores of the pre- and post-measurements of the experimental group

in the skill level of the back handspring skill on the floor device in favor of telemetry".

Conclusions

In the light of the objective and hypotheses of the research, in the light of the research sample and the method used, and on the basis of the statistical method used in the processing of data, and after presenting and discussing the results, the researchers reached the following conclusions:

1 - The training program using insanity training has a positive impact on the development of physical variables represented in (transitional speed by 18.48% - ability of men by 25.70% - muscle strength of the arms by 37.5% - agility by 36.57% - flexibility by 14.79% for the skill of back handspring on the device of floor.

2 - The training program using insanity training positively affected the skill level of the skill of the back handspring on the device of floor by 53.29%.

3 - The work of the training of the insanity being of high intensity to raise the efficiency of the students of the gymnastics specialization in the Faculty of Physical Education physically and skillfully.

Recommendations:

In light of the results of the research, the researchers recommend the following:

1 - Use insanity training as an effective training method in the development of physical qualities and skills in gymnastics for students of the faculties of physical education.

2 - Directing this research and training program to those working in the field of gymnastics training.

3 - Use the training of the insanity being within the programs of physical preparation throughout the training season.

4 - Interest in the application of insanity training in different samples.

5 - Conducting similar studies using insanity training on other sports activities and on samples, stages and other variables

.

References

1- Arabic References:

-1 **Ahmed Elhadi Youssef (2016):** Guided Readings in Gymnastics Training, Al-Kitab Center for Publishing, Cairo.

-2 **Ahmed Samir El Gamal (2019**): Foundations of Technical Gymnastics Training, World Sports Foundation, Alexandria.

-3 **Ahmed Mahmoud Hassan (2020):** The Effect of Insanity Trainings on Some Physical and Skill Variables for Junior Gymnastics, Published Research, Journal of Sports Sciences, Faculty of Physical Education, Minya University, October, 2020.

-4 **Ayman Nasser Mustafa (2017):** The Effect of a Insanity Training Program on the Muscle Group of the Upper and Lower Limbs and Some Squash Skills, PhD Thesis, Published, Faculty of Physical Education, Minya University.

-5 **Shaimaa Elsayed Radwan (2019):** The effectiveness of the use of insanity training at the level of some physical variables and the indicator of muscle fatigue in female volleyball players, published research, Journal of Sports Sciences, Volume 32, December issue, Part 13, Faculty of Physical Education, Minya University.

-6 **Shaimaa Faraj Saleh (2019):** The effectiveness of the use of insanity training at the level of some physical variables and the level of skill performance in handball, published research, Journal of Sports Sciences, Volume 32, Issue of Junea, Part 13, Faculty of Physical Education, Minya University.

-7 **Adel Jalal Hamed, Al-Hussein Sayed Zakaria, Ahmed Salah Mohamed (2019):** The effect of high-intensity insanity training on some physical, skillful and physiological variables of flying players, research published by the Scientific Journal of Sports Arts - Faculty of Physical Education Girls in Gezira - Helwan University.

-8 **Adel Abdel Basir Ali (1999):** Sports Training and Integration between Theory and Practice, Cairo, Al-Kitab Center for Publishing.

-9 **Abdullah Mohammed Saad Al-Ansari 2019:** The impact of functional exercises on the level of performance of motor sentence in gymnastics for students of the Faculty of Physical Education, Minya University, unpublished master's thesis, Faculty of Physical Education, Minya University.

-10 **Ali Noureddine Ali (2019): The Effect of a Training** Program Using Insanity Training on Some Physical Variables and Some Kicks Combined for Taekwondo Juniors, Published Research, Assiut Journal of Sports Education Sciences and Arts, Volume 50, Issue 3, Faculty of Physical Education, Assiut University.

-11 **Kamal Abdel Hamid Ismail (2016): Performance** Measurement and Evaluation Tests Associated with Human Kinesiology, Al-Kitab Center for Publishing, Cairo.

-12 **Leila Elsayed Farhat (2012):** Measurement and Testing in Physical Education, Al-Kitab Publishing Center, Cairo**.**

-13 **Mohamed Ibrahim Shehata (2010):** The Qualitative Training System for Men's Technical Gymnastics, Horus International Foundation, Cairo.

-14 **Mohamed Sobhy Hassanein (2004):** Measurement and Evaluation in Physical Education, 4th Edition, Dar al-Fikr al-Arabi, Cairo.

-15 **Mahmoud Ismail Al-Hashemi (2015):** Exercise and Physical Loads, Modern Book Center, Cairo.

-16 **Marwa Medhat Hassan (2018):** Insanity training and its impact on some physical variables and the level of skill performance of gymnastics students at the Faculty of Physical Education, Beni Suef University, published research, Journal of Sports Sciences, Volume 31, December issue, Part 13, Faculty of Physical Education, Minya University.

-17 **Mustafa Hussein Bahi, Ahmed Kamal Nasara, Mokhtar Amin Abdel Alim" (2013):** Introduction to Tests and Metrics in the Sports Field, Anglo-Egyptian Library, Cairo.

-18 **Mervat Ahmed Kamal (2003):** The effect of the development of motor sensory perceptions, in some kinametic variables and the level of performance of the back handspring on the hands of the device of floor, Scientific Journal of Physical Education and Sports, No. 24, Faculty of Physical Education, Alexandria University.

-19 **Wajdi Mustafa Al-Fatih, Mohamed Lotfi Al-Sayed (2002):** The Scientific Foundations of Sports Training for Player and Coach, Dar Al-Huda for Publishing and Distribution, Minya.

2. Foreign References:

20- **Henson, P. 1996:** - Plyometric Training, Track & Field Coaches Revlew, Vol, 96, No.1, pp 32.

21- Schmitz, D.,)2003(:- Functional Training Pyramids, New Truer High School, kinetic Wellness Department , USA

22- **Starosta 1998**: Movement coordination as dement in sport selection system biology of sport, journal, Article Warsaw

23- **Tim bacon. M.A et al (2006)** :- Princeton squash strength training manual, july ' . Med Sci Sports Exerc

3. References of the International Information Network (Internet):

24- **https**://www.beachbody.com/product/fitness_programs/insanity Retrieved at 6/9/2020

25- https://www.webmd.com/fitness-exercise/a-z/beach-body-insanity-workout **Retrieved** at 6/9/2020

26- **http**://www.yallaforma.com.Insanity-cardio

Summary

The effect of insanity training on the level of performance for back handspring skill on the floor device

• **Prof. Dr. Manal Ahmed Amin**
• **Prof. Nasser Omar Al-Waseef**
• **Prof. Dr. Ahmed Mahmoud Hassan**
• **Eng. Abdullah Mohammed Saad Al-Ansari**

The researchers aimed to know the impact of exercises at the level of skill performance of the skill of the back handspring on the floor device, and the researchers used the experimental approach to suit it to achieve the goal of this research and the research community included students of the fourth group specializing in gymnastics in the Department of Exercises, Gymnastics and dance at the Faculty of Physical Education, Minya University in the second semester of the academic year 2020 /2021 , numbering (20) students, and the researchers selected sample of (20) twenty students from the total research community.

The most important results indicated that the training program using insanity training had a positive impact on the development of physical variables represented in (speed by 18.48% - ability of legs by 25.70% - muscle strength of the arms by 37.5% - agility by 36.57% - flexibility by 14.79%) and positively affected the skill level of the skill of back handspring on the device of floor by 53.29%.

• **professor Head of the Department of Exercise, Gymnastics and Motor Expression at the Faculty of Physical Education, Minya University.**
• **professor Methods of teaching gymnastics in the Department of Exercises, Gymnastics and Motor Expression at the Faculty of Physical Education, Minya University.**
• **professor Assistant at the Department of Exercise, Gymnastics and Motor Expression at the Faculty of Physical Education, Minya University.**
• **Modares assistant Department of Exercises, Gymnastics and Motor Expression at the Faculty of Physical Education, Minya University.**

ملخص البحث باللغة العربية

تأثير تدريبات الانسانتى على مستوى الاداء لمهارة الشقلبة الخلفية على جهاز الحركات الارضية

● أ. د/ منال أحمد أمين
● أ. د/ ناصر عمر الوصيف
● أ.م.د/ أحمد محمود حسن
● م.م/ عبدالله محمد سعد الأنصارى

استهدف الباحثون معرفة تأثير تدريبات على مستوى الاداء المهارى لمهارة الشقلبة الأمامية على جهاز الحركات الأرضية، واستخدم الباحثون المنهج التجريبى لملائمته لتحقيق هدف هذا البحث واشتمل مجتمع البحث على طلاب الفرقة الرابعة تخصص الجمباز بقسم التمرينات والجمباز والتعبير الحركى بكلية التربية الرياضية جامعة المنيا وذلك في الفصل الدراسي الثانى للعام الجامعي 2022/2021م ، والبالغ عددهم (20) طالب ، وقام الباحثون باختيار عينة عمدية قوامها (20) عشرون طالب من إجمالي مجتمع البحث.

وقد أشارت أهم النتائج إلى أن البرنامج التدريبى بإستخدام تدريبات الإنسانتى أثر إيجابيا على تنمية المتغيرات البدنية المتمثلة فى (السرعة الانتقالية بنسبة 18.48 % – القدرة للرجلين بنسبة 25.70 %– القوة العضلية للذراعين بنسبة 37.5 %– الرشاقة بنسبة 36.57 %- المرونة بنسبة14.79 %) وأثر إيجابيا على المستوى المهارى لمهارة الشقلبة الخلفية على جهاز الحركات الأرضية بنسبة 53.29 %.

● أستاذ ورئيس قسم التمرينات والجمباز والتعبير الحركي بكلية التربية الرياضية جامعة المنيا.
● أستاذ طرق تدريس الجمباز بقسم التمرينات والجمباز والتعبير الحركي بكلية التربية الرياضية جامعة المنيا.
● أستاذ مساعد بقسم التمرينات والجمباز والتعبير الحركي بكلية التربية الرياضية جامعة المنيا.
● مدرس مساعد بقسم التمرينات والجمباز والتعبير الحركي بكلية التربية الرياضية جامعة المنيا.