

## **The Effect of Some Specific Exercises on Developing the Level of Skill Performance of the Back Cycle on the Bar, Followed by Standing on the Hands, by the Parallel, for Young Women under 12 Years old**

**\*Dr/ Reem Mohamed El-Desouky Mohamed**

### **Introduction and research problem**

Gymnastics is considered one of the important sports activities in the sports field as it includes many skills on different devices, which are characterized by a high degree of technical and formal performance, which is considered one of the main factors leading to winning the championships. The ability of its players to perform exercises characterized by difficulty and at the same time in the correct artistic and aesthetic form, and this of course imposes on the gymnast the need to have some physical qualities and skill and psychological abilities and must be developed in the various preparation programs and their connection with modern scientific methods.

And both "from Cretu, Mihailalon (2012), Mezai, Cristea (2014 AD), Iztok, Et al (2015 AD) indicate that because the sport of gymnastics changes and develops continuously in technical aspects, level of performance, difficulties and skills, as well as the accuracy and elegance of movements This requires modifications in training methods because they need special capabilities to know the ability of athletes in gymnastics in general and on the parallelepiped in particular, which

requires the preparation of appropriate training programs. (18: 122), (22: 98), (21:56).

Ana Maria, Corlaci (2014) and Mohab Abdel Razek Ahmed (2002) agree that the use of special exercises requires the use of working muscles that are similar in composition to the movements of the skill according to the "movement path used in competitions, and to identify the minute details of motor skills. Differential with muscles working in skill and direction of muscular action to improve skill performance. (419,414: 15) (23:12)

Browen (2004) and Muhammad Ibrahim Shehata (2003) explain that special exercises for performance should be used that contain a pattern similar to the basic technical performance of the skill when developing and developing the correct performance of motor skills in gymnastics. One of the conditions for these exercises is that they contain the installation of the basic part of the skill and be easier. Its skill with flexibility can be difficult to regulate, and the number of repetitions depends on the ability of the practitioner (17:24), (9:67).

Fred Roeth (2006) and Hazem Hassan Mahmoud (2005 CE) believe

---

\* Assistant Professor, Department of Sports Training, College of Sports Education, Mansoura University.

that the use of special exercises in training can play an important role in improving the level of skill performance because it focuses on the technical performance of the skills and each exercise is similar to the performance of the motor skill in the chronological path to achieve the sense of the player track In order to increase the effectiveness of this method, the following principles should be followed:

Design and implementation of special exercises for working muscles and movement path of skill.

- Start with simple exercises and build up to the most difficult.
- Paying attention to this method when the goal is to develop the physical characteristics of motor performance while improving skill performance (19: 123,122), (3:45).

Talha Husam Al-Din (1997 AD) explains that special training for performance is one of the best methods for improving skill performance through training in a style that is very similar to the skill method itself, and the more special the training is, the more it leads to a higher training return during the training process (7: 10).

Naglaa Salameh Muhammad (2001 AD) indicates that the parallel system is one of the gymnastic equipment that is characterized by its kinetic performance by the coherence of movements in the form of groups that are predominantly weighted and rotations. Therefore, it requires finding some auxiliary tools to train on each skill to reach the aesthetic form of the skill accurately and smoothly (14:13) .

Parallel organ is one of the important devices in artistic gymnastics for women, as it performs a set of different skills in the degree of difficulty in accordance with the instructions of the Egyptian Gymnastics Federation and the requirements of the parallel apparatus

#### **Perform 10 movement skills**

- Moving from the lower bar to the upper and vice versa
- Performing the final movement with difficulty of no less than c (20: 134).

And through the researcher's work as a trainer and referee, and her participation in many tournaments, and her knowledge of the grades of the players in the Republican Championship for the season (2016-2017 AD), she found a decrease in the level of grades of the female players on the parallel device compared to the rest of the devices and that the skill of the micro-cycle around the pelvis is followed by the standing on the hands (HBSCLE) Balance) with difficulty C and its value as a prerequisite for the obligatory sentence of 1.0 degrees and it is one of the basic skills through which it is possible to graduate with skill to increase the difficulty, including Hyperscal Balance followed by Voltost with difficulty D and Hyper skull Balance Voltost and Half with difficulty E and any skill of the endings skills on the two different parallels Rising must be played the Balance skill, followed by the descending skill with different difficulties.

We find that the skill of (Hypo cycle Balance) is compulsory for the stage of under 12 years of age and that numbers

the juniors to the optional stage from under 13 to the first degree as all the previous stages do not leave a dynamic sentence without the skill of the Hyper skill Balance, as it is one of the basic skills of all the skills of the parallel system and the skill can be difficult to the Hyper skill Balance Voltost, Circle Balance Voltost, then Grand Hub circle Balance Half Twist, then Grand Inverted.

The researcher noticed the inability of the players to perform the balloons with a good level of performance, which exposes the player to a deduction of 0.05, which is half the value of the requirement, and if the player fails and falls during the performance of the requirement, 1.0 degree is deducted from the value of the sentence in addition to the deduction of the value of the requirement and therefore the player is not charged (i.e. bonus) ) Any additional score for the player when linking a skill in question with one of the other skills, and the research problem appeared in that it is a serious scientific attempt aimed at identifying the effect of specific training on developing the level of performance of the back-cycle skill on the bar, followed by standing on the hands on a parallel device for young women under 12 years of age.

**Research aims:**

This research aims to develop the level of performance of the back cycle skill on the bar, followed by the handstand on a parallel device for girls under 12 years old as a basic requirement for players to acquire the values assigned to the requirements of performing the

kinetic sentence on that device through:

1- Identify the effect of some specific exercises in developing the physical variables for the skill of the back cycle on the bar, followed by the handstand on a parallel device for young women under 12 years of age.

2- Identifying the effect of some specific exercises on developing the level of performance of the back cycle skill on the bar, followed by the handstand on a parallel device for junior gymnasts.

**Research hypotheses:**

1- There are statistically significant differences between the pre and post measurement of the research sample in the level of measurements of the special physical variables and the level of performance of the back-cycle skill on the bar, followed by the hand-stand (Hibiscall Balance) on the female gymnastics parallels under 12 years of age in favor of the post-measurement.

2- There are statistically significant differences "between the improvement rates between the pre and post measurement of the research sample in the level of measurements of the special physical variables and the level of performance of the back cycle skill on the bar, followed by the handstand (Hibiscall Ballance) on the parallels of female gymnasts under 12 years of age in favor of the post measurement.

Search terms

Qualitative training

To be dynamically identical between its path and the technical path, and also lead to the development of dynamic qualities with the need to simulate the time path in some parts of the

movement, and the specific exercises for performance take many forms of the activity of the practicing athlete (10:34)

#### **Research Methodology:**

The researcher used the experimental method using the pre-post measurement for one experimental

group, due to its suitability to the nature of the research

A- The research sample: The sample was chosen by the intentional method and it included 7 players who represent the research community for junior gymnasts under 12 years old at the Sporting Club. Table (1) shows the basic variables of the research sample.

**Table (1)**  
**The arithmetic mean, standard deviation, and torsion coefficient of the basic variables of the research sample**

<b>Variables</b>	<b>Average</b>	<b>deviation</b>	<b>torsion</b>
<b>Height</b>	150.30	5.768	1.000-
<b>Weight</b>	38.100	5.345	1.342-
<b>Age</b>	12.200	3.634	2.122-

Table (1) shows the homogeneity of the research sample in each of the variables, height, weight, and age, as the value of the torsion coefficient of the variables in question ranged between (1.000-, -2122), and all of them lie within the average curve whose value ranges between +3.

#### **Research areas:**

##### **Time domain:**

The surveys and research measurements were applied and the proposed program was implemented during the season 2019 AD\_2020 AD, where the basic experiment was applied for a period of 8 weeks in the period from to

##### **Spatial domain:**

pre and dimensional measurements were made and the content of the training program was carried out in the gymnastics hall of the Sporting Club.

#### **Research tools:**

The researcher used the following tools and devices to carry out the research

- 1- A medical scale to measure weight in kilograms.
- 2- The Rostameter device to measure height in cm.
- 3- Stopwatch
- 4- Divided Box.
- 5- Mind a wall.
- 6- Elastic ropes.
- 7- A gnomometer to measure the range of motion (degrees).
- 8- Parallelogram.
- 9- Low parallel.

##### **Steps to conduct the research:**

First: Determining the muscular work of the research skill: The skill of the study was classified according to the type of muscular work mentioned by Ahmad Al-Hadi (2007 AD), who established the division of gymnastic movements according to the similar dynamic structure, especially for the movements of the trunk and limbs, where the basic muscular work consists of the skill in question:

- 1- A group of working muscles of the arms and shoulder joint.
- 2- A group of working muscles on the torso (abdomen, back).

### Develop quality exercises

According to the previous analysis and the Russian expert at Sporting Club and the experience of the field researcher as a former coach for the Egyptian national team, the following took into account when choosing the exercises:

Skill-performance on parallels is low.

Dividing a skill into feeding and teaching it from easy to difficult.

- Taking into account the working and interviewing muscles during the skill performance, according to Ahmad Al-Hadi's classification (2007 AD).

- Determine the physical level of the players sample search.

Determine the appropriate training methods (interval training, low and high intensity).

The researcher has identified the most important tests that measure the elements of physical fitness and skill under research on a parallel device, by analyzing references, scientific research and previous studies.

- Achieving the scientific conditions (validity - reliability - objectivity) for the selected tests.

- Executed on samples similar to the research sample.

- It can be applied easily and easily with the availability of the tools used, and these tests are:

#### **Tests of physical characteristics:**

1- Abdominal muscle strength test.

2- The muscle strength test of the back muscles.

3- Muscular strength test for shoulder muscles and cultivars.

4- Flexibility test for shoulders.

-°Agility test attached (1) (11:56)

Evaluating the level of skill performance

The level of skill performance of the student's skill was assessed with the help of a committee of arbitrators accredited by the Egyptian Gymnastics Federation. The skill subject of the study was divided into three stages (preliminary, basic and final). The grades were distributed to each of the three stages on the basis that the final score is 10 degrees in addition to 10 degrees of discounts for skill performance according to the instructions of the Egyptian Gymnastics Federation (20: 122).

Determine the content of the proposed program

The time of the training unit = (90) minutes.

- The number of training units per week (4) training units = (4) x (90)

- (360) minutes per week.

- The total size of the program implementation period is (8) weeks in minutes = (360) s x (8) = (2880) minutes.

- The warm-up time and the closing part of the training program = (20) the warm-up + (10) the closing

- Training time for specific physical variables (25) BC

- The time for the specific exercises of the skill in question (25) s, attached (2).

**Table (2)**

**Distribution of ratios and preparation times (physical - special exercises)**

S	Number ratio Number type	Percentage (%)	Total time in minutes
١	Special physical numbers	45 %	1008
٢	Qualitative skills training under discussion	55 %	1232
٤	Total	100 %	2240

View and discuss results

**Table (3)**

**The significance of the differences between the pre and post measurement in the physical tests skill under investigation using Wilcoxon test n = 7**

Variables	Ranks orientation	ranks Average	ranks Total	The value of D
The mobility of the shoulders	Negative ranks	0.00	0.00	2.184
	Positive ranks	3.00	21.00	
Shoulder muscle strength (20 s)	Negative ranks	0.00	0.00	2.678
	Positive ranks	3.00	21.00	
Abdominal muscle strength (20 s)	Negative ranks	0.00	0.00	2.456
	Positive ranks	3.00	21.00	
Back muscle strength (20 s)	Negative ranks	0.00	0.00	2.599
	Positive ranks	3.00	21.00	
The skill (subject of research)	Negative ranks	0.00	0.00	2.562
	Positive ranks	3.00	21.00	

The tabular "d" value at 0.05 = 1.96 significance

It is evident from Table (3) that there are statistically significant differences between the pre and post measurement in the direction of the dimension in each

Physical variables where the arithmetic mean of the post-measurement was greater than the pre-measurement

**Table (4)**

**The arithmetic mean and improvement rates for both pre and post measurement for physical tests The skill in question n = 7**

Variables	measuring unit	Pre measure		Post measure		% Rate of improvement
		M	E	M	E	
The mobility of the shoulders	Cm	23.987	2.675	26.342	1.982	9.817 %
Shoulder muscle strength (20 s)	No.	12.032	1.859	16.271	1.257	35.231 %
Abdominal muscle strength (20 s)	S	19.394	1,723	24.541	1,281	26.539%
Back muscle strength (20 s)	S	24.657	1.918	32.872	1.327	33.317%
The skill (subject of research)	Degree	9,563	1.783	12.458	1.121	30.272%

Table (4) shows that there is an improvement in all the variables, as the largest variable in the rates of improvement was the strength of the shoulder muscles with a percentage of (35.231%) and the lowest was the movement range of the shoulders with a percentage of (9.817%). Table (3) shows the existence of statistically significant differences. Bin measurement of pre and post in the direction of the dimensional in all the physical variables where the arithmetic mean of the post measurement was greater than the pre measurement as the results of the tests for the physical variables and the level of skill performance between the pre and post measurement of the sample under study were in favor of the post measurement in all tests of physical variables strength} abdominal muscles , Back muscles, shoulder muscles {, the range of motion of the shoulders, and the level of performance of the skill of the posterior rotation around

the bar, followed by the standing on the hands (hexricle balance) on the parallels of different height for young girls under 12 years old, where the value of (d) calculated between (2.184, 2.678) is attributed The researcher is the reason for the development to the contribution of the specific exercises prepared by the researcher for the sample in question, which has been developed on sound training grounds and according to appropriate strengths for the age stage, as well as the tools used from boxes and cones. And a medical ball, taking into account the working tendons and joints, that specific exercises lead to an increase in the feeling and feeling of movement that the player performs and to improve the functions, efficiency and effectiveness of the performance of the rest of the various muscles of the body and thus improve the physical variables of the skill in question.

It also agrees with the study of Reem Muhammad al-Desouki (2002 CE) and

the study of Amal Muhammad Zakaria (2007 CE) Xayo (1998) Xiao, that special exercises have a positive effect on physical variables and the improvement of the skill level (5: 43) (1: 19) (25:56) ).

It also agrees with the results extracted from the study variables with the opinion of Serena W.J. Khong a, Pui W. Kong (2013), Haitham Abdel-Razek (2006) that the method of developing the physical characteristics of the specialized sports activity must be appropriate to the type of muscle contractions for that activity in the skill performance of the motor skill to be trained on, and therefore the trainer must employ Special purpose training and what helps in the amount and raising the level of training for a player (24:67), (13:23).

The researcher also believes that the specific exercises had a positive effect in improving the physical variables and thus the level of skill performance increased and this was evident in the decrease in the degree of performance discounts and the players were able to perform handstand on the parallel of the women, as the development of the physical variables is accompanied by the development of the level of skill performance.

The results of this research agree with the opinions of Ali Muhammad Abd al-Rahman (2005 CE) and Saeed Abd al-Rashid (2001 CE) that the method of developing the physical characteristics of the specialized sports activity must be appropriate to the type of muscle contractions for that activity in the skill performance of the motor skill to be trained Accordingly, the

trainee must employ special qualitative exercises and what helps in the amount and raising the level of the player's training status (8: 56), (6: 34.)

Muhammad Ibrahim Shehata (2011), Potop (2013), Bart Conner (2016) confirms that the gymnast needs a training method that is similar to the motor path of performance, meaning that the method and style of muscular work during physical exercises must be similar to the method of muscular work during skill performance. And training using special specific exercises similar to muscular work for skillful performance, and whose level of progress can be measured through standardized scientific tests, is the best way to raise the efficiency of the physical work of the gymnast. (10:67), (23:56), (16:37).

Based on the above, it becomes clear that the first hypothesis of the research has been validated, which states: "There are statistically significant differences between the pre- and post-measurement of the research sample in the level of measurements of the physical variables and the level of performance of the skill of the back cycle on the bar, followed by the handstand (Hyperskill Ballance) on the parallelism of young women Gymnastics under 12 years old in favor of telemetry

Table (4) shows the arithmetic mean and improvement rates for both pre and post measurements for physical tests.

The skill in question is an improvement in all the variables, where the largest variables in the improvement rates are strength

Shoulder muscles with a percentage of (35,231%) and the lowest is the range of motion for the shoulders with a percentage of (9.817%) The researcher attributes this progress in all physical variables to the proposed program for specific exercises that led to the development of strength for the shoulder muscles, which is the highest value by (35.231%), which led to an improvement in the level of female athletes in reaching the position of standing on the hands, followed by the strength of the back muscles With a rate of (33.317%), then the strength of the abdominal muscles by a rate (26,539%) had an effective role in improving the level of skill performance and the control of the player in the performance of the hips and the preliminary stage of the skill under discussion and the stability in the position of standing on the hands as the improvement of the flexibility of the shoulders led to a reduction in the degree of special deductions The angle of the shoulders during the performance of the skill and this was reflected in the rate of improvement of the skill under consideration by (30.272%)

These are the results of percentage improvement between the pre and post measurements of the sample under investigation in the level of physical variables and the skill performance under investigation. Strength} for the abdominal muscles, for the back muscles, for the shoulder muscles {, the motor range of the shoulders, and the level of performance of the skill of the posterior rotation on

the bar, followed by standing on the hands on Parallelism device for girls under 12 years of age, as the difference in the rate of change between the measurements of the sample under consideration in the physical variables and the level of skill performance under consideration in favor of the post-measurement. The effect of improving the level of measurements of the special physical variables of the skill in question, which was based on the style of some special exercises for skill performance, was reflected in the positive effect on the increase in the level of measurements of the special physical variables under study.

The results of this research agree with the opinions of Hazem Hassan Abdullah (2008 CE), Reem Muhammad al-Desouki (2002 CE), Talha Hussain Husam al-Din and others (1993 CE) that the various training programs for skill performance have a "positive" effect in raising the level and rates of improvement in measurements Physical variables and skill performance of the skill or skills in question. (5:17), (4:23), (7:37)

Based on the above, it becomes clear that the second hypothesis of the research has been validated, which states that there are statistically significant differences between the improvement ratios between the pre and post measurement of the research sample in the level of measurements of the special physical variables and the level of performance of the skill of the posterior cycle on the bar, followed by the standing on the hands (Hesraket Ballance) ) Ali Parallelism for junior

gymnasts under 12 years of age in favor of post measurement.

### References

#### First / Arabic references:

**1-Amal Muhammad Zakaria:** "The Impact of a Program for Specific Training on the Level of Performance of the Front Somersault Skill on the Hands on the Jumping Horse", Unpublished Master Thesis, College of Sports Education for Girls, Helwan University, 2007.

**2-Iman Farag Bashir:** "The effect of specific training on improving the performance of the frontal flip skill, followed by a straight forward course for junior gymnasts", an unpublished master's thesis, College of Sports Education for Boys, University of Alexandria, 2010.

**3- Hazem Hassan Abdullah A:** "A training program using specific exercises to improve the technical performance of the parallel skill of Hili Care Ali," Scientific Journal of Physical Education and Sports Sciences No. 4, Faculty of Physical Education, Alexandria University, 2005 AD.

**4- Hazem Hassan Abdullah:** "The Effect of Specific Training on Raising the Level of Skill Performance for Gymnastics Buds Under (6) Years", Unpublished Master's Thesis, Boys' College of Education in Al-Haram, Helwan University, 2008.

**5- Reem Mohamed El Desouki:** The effect of using a program of specific exercises to raise the level of performance of the front somersault skill on the hands for juniors on the jumping horse, an unpublished master's thesis, College of Physical Education

for Boys, Alexandria University, 2002 AD.

**6- Saeed Abdul Rashid Khater:** "Development of the dynamics of fitting with hands using an assistive device and its effect on the level of performance on the jumping horse", published scientific production, Journal of Sports Education for Girls, Zagazig University, 2001 AD.

**7- Talha Hussein Hussam El-Din:** The Scientific Encyclopedia of Sports Training, Modern Book House, 1997 AD.

**8- Ali Muhammad Abd Al-Rahman:** The Scientific Foundations of Planning in the Field of Gymnastics Unpublished Scientific Notes, College of Sports Education for Boys in Al-Haram, 2005 AD.

**9- Muhammad Ibrahim Shehata:** Training for Contemporary Gymnastics, Arab Thought House, Alexandria, 2003.

**10- Mohamed Ibrahim Shehata:** Specific Training System for Men's Artistic Gymnastics, First Edition, Horus International Foundation, Alexandria, 2011 AD.

**11- Muhammad Hassan Allawi, Muhammad Nasreddin Radwan:** Kinetic Performance Tests, Arab Thought House, Cairo, 2001 AD.

**12- Mohab Abdel-Razek Ahmed:** "The Impact of Specific Training of Sensory-Kinetic Perception to Improve the Technical Performance of the Anterior Circulation on the Balance Beam" Unpublished PhD thesis, College of Physical Education for Boys, Alexandria University, 2002 AD.

- 13- Haytham Abdel-Razek Ahmed:** “The effect of using the specific training program on improving the performance of the skill of twisting around the longitudinal axis to reach the inverted grip from the front major weight on the pulley apparatus”, research production scientific journal of the College of Physical Education for Boys, Helwan University, January, 2006
- 14- Naglaa Salama Muhammad :**The Effect of Using the Weighted System to Improve the Level of Some Physical Attributes and Some Motor Skills on the Parallel Apparatus”, Unpublished Master Thesis, College of Sports Education for Girls, University of Alexandria, 2001
- 15- AnaMaria,Corlaci:** The effect of attempted Ballistic training on the forth of speed movement,2014.
- 16- Bart Conner:** international Gymnastic federation for men’s artistic gymnastics Magazine, December 2016
- 17- Browen , James:** teaching and coaching gymnastics for men , human kinetics,2004.
- 18- Cretu,Mihailalon:** Ballistic training for explosive results , human Kinetics Publishers٢٠١٢ .
- 19- Fred Roethlisberge:** The coach's yearly planning. Handbook starrise international, Canada, 2006.
- 20- International Gymnastic federation:** code of points for women's artistic gymnastics competition sat world champion ships. Olympic games region intercontinental competition events with international participants· 2020.
- 21- Iztok,Etal:** Cod of points women,s Artistic Gymnastic Valid 2015.
- 22- Mezai,Cristea:** Performance Criteria in Aerobic Gymnastics , Impact on the Sportive Training 2014.
- 23- Potop,eta:** The Value of Gymnastic Conditions , Exercises to speed of learning Selected Gymnastic Skills , in AAHPER. Completed Research Quarterly, no. I. March,2013.
- 24- Serenaw.j.khonga, Puiw.kong:** Four weeks optlional leay Ballistic resistuce training al the end of season attenuvates declining jump performance of women volley ball players , The journal of strength,2013.
- 25- Xiao, G:** Research on the specific strength training of gymnasts On the Chinese, serial, journal of Beijing University Physical education, 1998.