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# **The effect of functional strength training using unstable surfaces on some physical and skill variables For Junior Wrestling**

*Research presented within the requirements for obtaining  
a master's degree in physical educationn*

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1442 H. -2021 A.D.

## **Introduction and research problem:**

The training process has taken great steps towards progress in our modern era, so that it became suitable for the players and the coach became constantly following up on everything new in the field of training in order to be able to provide the best and best thing in this field and raise the level and performance of his players.

Essam Abdel-Khaleq (2003) mentions that the methods of sports training are among the methods necessary to implement the training program to develop the training state of the player with a behavior that is the closest to achieving the required, and it is known as the mastered system planned for the positive interaction between the coach and the player to walk on the road leading to the goal of the sports training process.

The development of functional strength is one of the basic components that must be developed through standardized functional training programs. It is a combination of strength training with balance training, and it is no less important than the muscular capacity that mixes strength training with speed.

This is confirmed by Vom Hofe (2001) that muscular strength and balance are key elements of functional training. The integration between muscle strength and movement speed results in muscle capacity or force characterized by velocity, while the integration between muscle strength and balance results in functional strength.

And that the difference between traditional training and job training is that traditional training aims to produce non-directed force, and it always performs its movements in one spatial level and uses external stabilizers in most cases such as Swedish and fixed chairs, while functional programs aim to direct the resulting force and perform in multi-level and integrated movements. It does not rely on external stabilizers, but rather uses the spine to facilitate movement.

Shmidt & Wulf (1997) indicate that all motor forms originate in the center of the body. He adds that the term (functional) seems a little unclear, as functionalism is movements performed like those movements that the body is designed to perform in life, and therefore athletic trainers

who use functional strength training with their players must learn about the human body's geometry and how it works in normal life.

Vom Hofe (2001) indicates that functional strength training is suitable for all individuals of all levels of training and aims to improve the relationship between muscles and the nervous system by transforming the increase in strength gained from one movement to other movements.

Therefore, movement control exercises are considered necessary and important, such as training individual muscles through movement.

Fabio Comana (2004) states that balance is a key element in functional training, not only the balance between strength and flexibility or working and non-working muscles, but also what we might think are the methods used, for example standing on one foot and being able to move other body parts.

Alaa Kenawy (2003) asserts that the complete mastery of the kinetic skill is based upon reaching the highest levels of mathematical attributes of the wrestler, which are the moral and voluntary characteristics of the wrestler.

Sports training is considered a purposeful educational process with a scientific planning to prepare players of various levels to reach the best high levels, as it is a complex process of different factors or specific elements of the level of sports achievement by means of organized procedures that begin with the analysis of activity, the status of the player, setting goals and setting standards, and choosing content and methods, And follow-up, implementation and evaluation of performance outside and inside the competition, sports training is the meaningful compatibility between goals, planning, implementation, follow-up, course correction and evaluation, aiming to achieve an ideal achievement during competitions.

Essam El Din Abdel Khaleq (2003) AD mentions that sports training has become a means, not an end in itself, as it works to give the individual the full opportunity to perform his duties with the highest level of competence and works to develop and develop the individual's physical, functional and psychological capabilities and the possibility of using them to obtain the greatest benefit for himself and thus To the surrounding community.

Essam Abdel Khaleq (2003) AD indicates that the skill performance is closely related to the special physical and motor abilities as the mastery of the skill performance depends on the extent to which the requirements for this performance are developed in terms of special physical and movement capabilities such as muscular ability, compatibility, flexibility, agility, balance and the level of skill performance is often held Through the extent of the individual's acquisition of these special physical and motor characteristics, as “Mr. Abdel Maqsoud(1997) AD believes that training leads to an effect on the working muscles as well as it is applied in an applied way in improving the skills of motor performance in general and in this regard he adds, “Abdulaziz Al-Nimr and Nariman Al-Khatib” (1996) That the performance is improving visually.

It is better if the training is specific to the type of activity practiced and includes the most important muscles working in this activity and that they are developed in the same way they are used in competition.

On the importance of functional strength training, Scott Gaines (2003) explains that all training programs must include functional strength training, and this is demonstrated by saying that if we observe players during their competitions, we find that there are very few periods in which the player focuses on both feet Evenly and on one line, and more than that, the sports practiced from the sitting position are very few, such as rowing. Therefore, traditional exercises that practice most of their exercises from the sitting or standing position are not suitable for athletes in most sports activities.

As both "Essam Helmy and Mohamed Berekaa" (1997) AD indicate that dynamic motor performance requires many special skills, and each skill includes a set of performances, and that the most effective way to improve and develop performance is kinematic analysis, which requires determining the correct mechanical performance of the skill.

Individual sports, especially boxing and wrestling, require players to be in an appropriate physical, psychological and emotional state that enables them to perform distinguished performance during sports competitions, and the position of competition includes many variables that can affect the tasks required to be achieved, whether winning the match or performing well.

Through the researcher's scientific and practical experience and training of wrestling juniors, in addition to his contact with many wrestling coaches and players, he noticed that the training programs designed to improve the level of physical and skill performance during the special preparation period are almost devoid of the use of functional strength training, and that training on them is in an unregulated manner, which This gives the training unit a lot of boredom and distress, and the lack of an element of suspense in these training programs, which negatively affects the level of physical performance and skills of the emerging wrestlers, which makes many wrestling beginners move away from training.

### **Importance of Research:**

#### **Scientific importance:**

The research is due to the fact that it is exposed to studying the effect of functional strength training on some physical variables, and it will also contribute to adding a special reference to the effect of functional strength training in the Arab library. In addition, this topic did not take its right in Arab studies.

#### **Application importance:**

This research opens a field of scientific and applied studies that work to use a new method of training.

#### **Research goal:**

The research aims to try to identify:

The effectiveness of functional strength training using unstable surfaces on some physical and skill variables for beginners wrestling.

#### **Research Hypotheses :**

- There are statistically significant differences between the pre and post measurement of the experimental group in the physical variables under investigation and the level of performance of some motor skills in favor of the post measurement.
- There are statistically significant differences between the pre and post measurement of the control group in the physical variables

under investigation and the level of performance of some motor skills in favor of the post measurement.

- There are statistically significant differences between the two dimensional measurements of the experimental and control groups in the physical variables under investigation and the level of performance of some motor skills of the dimensional scale in favor of the post measurement of the experimental group.

### **search procedures:**

#### **Research Methodology:**

The researcher used the experimental method by designing two groups, one experimental and the other control, in order to suit the nature of this research.

#### **Research Society and Sample**

The research community includes wrestling juniors in Qalyubia governorate for the 2020/2021 sports season and their ages range from (15:17) years old and registered in the records of the Egyptian Wrestling Federation. The basic research sample was chosen from the wrestling buddies among young Muslims in Banha and their number reached (40) players who were divided into two groups, one of them Experimental and its strength is (15), and the program applies to them functional training and the other is control, and its strength reaches (15) players.

#### **Data collection methods and tools**

The researcher used the tools, devices and tests that are commensurate with the nature and objectives of the research and the mechanisms of action within the practical application of the research experiment.

#### **Means and tools**

- Restameter.
- Dynamometer.
- Medicine ball weights (3/5/7 kg).
- Swiss balls (stretchy exercise balls).
- rubber acetate.
- Casio Stopwatch, for shortest time.

### **The exploratory study:**

Due to the nature of this study, the researcher conducted an exploratory study, in order to discover what negative aspects could be remedied before starting the implementation of the basic study. Conducting meetings with them to clarify the idea of the research, its objective and the nature of the role assigned to each individual in the research, as well as providing them with special information that enables them to answer various questions and inquiries attached (5), in order to identify the following points:-

- Knowing the time required to perform all measurements.
- Knowing the time and order of measurement on each device used to find out the best way to save time while taking body measurements.
- Ensure the safety of the devices used in the measurement.
- Provide the necessary number of tools required for measurement.
- Standing on choosing the best angle for shooting when players perform the skills used under study.
- Selection of assistants.
- Calculating the scientific parameters for the tests used under study

### **The results of the exploratory study:**

- The timing, arrangement, and measurement procedures were studied.
- The anthropometric registration form has been legalized
- The learned parameters were calculated for the tests used under consideration.
- The assistants who will be used in the study procedures were identified.

### **Application Procedures:**

#### **tribal measurements:**

The pre-measurements were made of the individuals of the research sample for the two groups (experimental and control) in the period from 9 Sunday, /13/2020 AD.

### **basic study:**

The two groups (experimental - control) were subjected to a unified program in all its contents except for the proposed program (functional strength training) which was applied by the researcher to the experimental group players only with the same time of implementation of the program on the two research groups (experimental - control) for a period of 88 weeks in the period From Sunday, /20/2020 AD to 12Thursday, /11/2020 AD.

### **Dimensional measurements**

The dimensional measurements of the two groups (experimental - control) were made in the used variables under investigation and under the same conditions as the previous measurements during the period of 11/17/2020 AD.

### **statistical treatments.**

In his statistical treatment of the sample data, the researcher used the following statistical methods:

1. arithmetic average.
2. Improvement percentages
3. standard deviation.
4. difference between the two averages T.Test.
5. Median
6. Correlation Coefficient
7. torsion

### **conclusions and recommendations**

#### **Conclusions:**

Through what was achieved from the research hypotheses and according to the findings of the statistical analysis results and in the light of presenting and discussing the results and within the limits of the research sample and the tools used, the researcher was able to arrive at

- 1- That the training program using manpower training has improved the level of performance of some physical variables in the sport of wrestling.



- 2- Functional strength training has a positive effect on the development of the skill level of a wrestling player.
- 3- There are statistically significant differences between the pre and post measurement of the experimental group in the physical variables under investigation and the level of performance of some motor skills in favor of the post measurement.
- 4- There are statistically significant differences between the pre and post measurement of the control group in the physical variables under investigation and the level of performance of some motor skills in favor of the post measurement.
- 5- There are statistically significant differences between the two dimensional measurements of the experimental and control groups in the physical variables under investigation and the level of performance of some motor skills of the dimensional scale in favor of the post measurement of the experimental group.
- 6- The proposed functional strength training led to better results, both physically and skillfully, for the experimental group compared to the control group.

### **Recommendations:**

Based on the findings of the researcher through conducting this research, the researcher recommends the following:-

- 1- Application of the proposed training program for its effectiveness and positive impact on the level of skillful performance of the wrestling player.
- 2- Take into account the selection of center strength and stability exercises in line with the prevailing muscular contractions and the kinetic path of force during the skillful performance in the sport of wrestling.
- 3- Paying attention to functional strength training for the muscles of the arms, abdomen and back in order to improve the level of skill performance of the skill under discussion.
- 4- Using functional strength training proposed at the beginning of the training year during the performance phase to reduce some of the problems facing players such as weakness of the front abdominal muscles and the strength and shortness of the posterior muscles of the trunk as this requires strengthening the abdominal muscles and

lengthening the posterior muscles of the trunk, which leads to an improvement in the level of performance Skill for the skill in question.

- 5- Attention to functional strength training in the warm-up part and special preparation in order to help players improve the level of physical and skill performance.
- 6- Conducting more similar research and studies on different age stages on the rest of the different games.
- 7- Conducting more research and studies on the most important exercises that contribute to the development of muscle strength and the best ways to legalize it.
- 8- Taking into account the similarity of the performance of the selected functional strength training with the form of skill performance of the skill under discussion.
- 9- Conducting similar studies at different age stages using functional strength training.