

ملخص البحث

باللغة الإنجليزية

### **The Introduction and the problem of the study**

Among the most important subjects for those who are interested in sport from all over the world is record breaking in sport competitions, in general, and swimming competitions, in particular. The growing interest in this subject encourages scientific search methods to explain related phenomena and find out more scientific research theories and techniques in the field of training. Accordingly, better solutions can be found to solve different problems so that athletes' performance and records can be improved in all swimming competitions. The improvement of performance in swimming has gained great interest from those who are concerned with training. Recently, such interest has grown on the ground that technical performance positively and directly affects the level of record achievements.

There are some factors which influence technical performance. It is taken for granted that any sport activity has some particular physical and motor – requirements as well as various skills. Having such requirements and skills, the athlete can reach higher levels of performance. Consequently, the development of these requirements and skills has become an indispensable necessity.

It is worthy to mention that physical preparation has recently been allocated most components of the general training program applied to the best swimmer in all over the world. Physical preparation is allocated 15-30% of total training time. Muscular strength, endurance, and flexibility are the most important elements of physical preparation which must be focused upon particularly among beginners.

Accordingly, these elements must be developed in an integrated and balanced way and in accordance with the different performance requirements of all types of swimming. By doing so, the ideal performance can be reached.

It is also worthy to mention that the study attempts to determine the relation between the increase in the flexibility of some joints (as being a physical component of swimming performance) on stroke length and stroke rate (as being a technical component which affects swimming speed).

Stretching techniques, which improve flexibility, have become more varied and developed. More specifically, all techniques seem to have advantages and disadvantages. Therefore, it will be useless and ineffective to make use of only one technique. Accordingly, the researcher view is that mixing some of these ways in accordance with the requirements swimming performance should be made through special, targeted programs in and out the water. Results of these programs should be evaluated and compared in order to recognize the best approach to improve the technical performance and the level of the records. Therefore the researcher will make a study on the effect of a specific training program for muscle stretching in and out the water (using a mixture of stretching techniques exercises) on the increase of the motion range and muscle strength and how this will improve the level of records.

#### **Significance and necessity of the study :-**

##### **Scientific significance :-**

The study attempts to postulate some scientific steps and foundations through which movement range can be increased so that technical performance of swimmers can be improved. The scientific significance of the study is attributed to the fact that the studies

concerned with the influences of stretching upon the increase in movement range and the improvement of technical performance are few.

### **Applied significance :-**

The study is considered a practical application and a new technique upon which swimmers can rely to improve the technical performance of swimmers through increasing the movement range of joints by the suggested stretching program.

### **The objectives of the study :-**

#### **the study aims to:**

- Effect of using muscle stretching exercises in the water on developing the level of physical performance (flexibility and strength) and the level of record achievement for the four swims;
- Effect of using muscle stretching exercises out of the water (dry land) on developing the level of physical performance (flexibility and strength) and the level of record achievement for the four swims;
- Effect of mixing muscle stretching exercises in and out of the water on developing the level of physical performance (flexibility and strength) and the level of record achievement for the four swims;
- The relationship between the selected physical abilities and the level of record achievement for the four swims.

### **Enquiries of the research:**

- 1- What are the most effective training program (in water, out of the water and mixing) on development of the flexibility;
- 2- What are the most effective training program (in water, out of the water and mixing) on development of the muscle strength;
- 3- What are the most effective training program (in water, out of the water and mixing) on development of the level of record achievement for the four swims;
- 4- What is the relationship between the selected physical abilities and the level of record achievement for the four swims.

### **Procedures :-**

#### ○ **Study Method :-**

The researcher uses the experimental method in terms of 3 groups experimental as the best suitable method for the study. The researcher also makes some pre-and post- assessments.

#### ○ **Study population :-**

The study population was deliberately selected to include some swimmers of Al Zohour club (40 swimmers, born in 1994-1995, practicing short – distance swimming).

#### ○ **The study sample :-**

This consistent group is divided into 3 groups. Each group includes 10 swimmers.

### **Data – collection instruments :-**

#### ○ **Appliances and instruments :-**

- 1- Medical weighing machine to measure weight in kilograms.
- 2- A restameter to measure height in centimeters.
- 3- A stop – watch with a recording ability at 1/100 second.
- 4- A flexible measurement tape.
- 5- Two scale rulers – 30 cm – and 100cm.

6- Dynamometer electric for measurement muscle strength.

○ **Tests of technical performance in swimming :-**

- 1- The test of calculating stroke length and stroke rate.
- 2- Stoke efficiency index.

○ **Program components :-**

- The duration of the training program = 8 weeks.
- Number of weekly training times = 4 times.
- Total of training units = 32 unites.
- Training the first experimental group of use muscle stretching exercises in the water;
- Training the second experimental group of use muscle stretching exercises on the dry land time;
- Training the third experimental group of use muscle stretching exercises in the water and on the dry land.
- Training three experimental groups in same time with 3 assistants.

○ **Selected Joints :-**

- The foot in the direction of flexing.
- The foot in the direction of extension.
- The spine in the direction of flexing.
- The spine in the direction of extension.
- The knee in the direction of flexing.
- The shoulder in the direction of flexing.
- The shoulder in the direction of extension.

○ **The applied stretching techniques :-**

- Dynamic stretching.
- Static stretching.
- PNF stretching .

**Conclusions and recommendations :-**

○ **Conclusions :-**

In view of the findings of the study, and in the light of the study sample and measures, the following conclusions have been reached:

- There are statistically significant differences between the pre and post assessments that support the post assessment for the three experimental groups in increasing the motional range of the selected joints (foot, knee, spine and shoulder). Furthermore, there are statistically significant differences between the three experimental groups in the post assessment in the positive flexibility variable for the shoulder in the flexing direction which supports the third group (mix);
- There are statistically significant differences between the pre and post assessments that support the post assessment for the three experimental groups in increasing the muscle strengths variable which affects the selected joints (foot, knee, spine and shoulder). Noted also that there are statistically significant differences between the three groups in the post assessment on the variables of the shoulder strength, spin, strength, nee strength, foot strength in the flexing direction that support the first group (in water ) and the third group (mix);
- There are statistically significant differences between the pre and post assessments that support the post assessment for the three experimental groups in increasing the level of record achievement. Furthermore, there are significant differences between the three groups in the post assessment on the variables of stroke length 50M freestyle that

supports the first group (in water) and the third group (mix), the variables of stroke length 50M backstroke that supports the first group (in water) and the third group (mix), the variables of the stroke frequency 50M backstroke that supports the second group (out of water), the variables of the stroke effectiveness 50M backstroke that supports the first group (in water and the third group (mix), the variable of stroke length 50M breaststroke that support the first group (in water) and the third group (mix), the variable of the stroke frequency 50M breaststroke that support the second group (out of the water), the variable of stroke length 50M butterfly stroke that support the first group in water and finally the variables of stroke effectiveness 50M butterfly stroke that supports that first group (in water);

There is a positive correlation between the variables of the positive flexibility, highest fixed strength and the level of record achievement (time of the 50M, stroke length, stroke frequency and stroke effectiveness) for the four swims.

○ **Recommendations :-**

In light of the findings of the study, the researcher recommends the following:

- 1- Developing flexibility in water to increase the level of records for the junior swimmers;
- 2- Implement the training program on different age bands;
- 3- Use more than one stretching technique to increase flexibility for the swimmers;
- 4- Study designing specific drills development flexibility in water for swimmer;
- 5- Use both water and dryland exercises (not only dryland) in developing physical fitness specially flexibility and strength for swimmers.



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***Effect of using different methods of specific flexibility out and in the  
Water on levels of physical Performance and Record achievement  
for juniors of swimming (comparison Study)***

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