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Original article

EFFECTS OF RELAXATION TRAINING ON MUSCLE TENSION AND THE PERFORMANCE LEVEL OF 50M FRONT CRAWL SWIMMING

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Abstract

Purpose. Relax training attempts to use the athlete's awareness of muscle contraction/relaxation sensations to derive degrees of self-awareness. This method has been successfully used in decreasing anxiety for optimal psychological states of performance and pain tolerance. It is performed by instructing the athlete to contract then relax specific muscles in a definite order. The aim of the study was to investigate Effects of relaxing training on Muscle Tension and the performance level of 100m front crawl swimming.

Methods. Six female swimmers from the university swimming team, All participants completed (3) questionnaires to assess health history, muscle tension levels and attention concentration. And identify the record of 50m front crawl swimming before and after eight weeks of relaxation training (three times weekly).

Results. Statistical analyses showed that a significant decreasing in muscle tension levels and attention concentration after the relaxing program. And no significant differences in performance level of the 50m front crawl swimming.

*Conclusions.*The relax training practice was the improvement of muscle tension levels and attention concentration without improvement in the performance level of 50m front crawl swimming

Key words: Relaxing Training, Muscle Tension, Crawl Swimming

Introduction

Supports access the swimmers to reach higher levels and achieve success on scientific grounds is in the ways of setting, whether prepared physically or psychologically or mentally, and require swimming use of the mind to deal with the aqueous medium and air conditioning with him would need to understand and accommodate each movement so that their performance accurately and mastery requires full compatibility between the two muscular and nervous system, as well as the use of certain mental abilities and psychological preparation until it is a sense of movement and focus on them and raise the efficiency of its performance.

This leads to the development of performance and often produces numerous errors in performance due to the low concentration of attention, tension, and anxiety, which leads to rushing performance in the belief that this serves skill.

Mohamed (2002) believes that a relaxation exercises variables that help to reduce muscle tension and anger controls that contributes in the face of stress or interview a high level of stress types and focus attention and are therefore more important and necessary.

The relaxation main entrance to reach the optimum level of arousal to enable good performance, especially in competitive situations, and occupies training relax especially within the training programs at senior levels, and it became fashionable to include training programs for high-level special program to teach and develop the ability of sports to relax.(Mohamed, 1995)

To obtain a high degree of relaxation, it is imperative that the individual is constantly training on the relaxation process where it's difficult skill require much training and a long time so that he can use and benefit from. Mohamed, (1998)

Osama, Mohamed (1992) pointed out the importance of training relax the swimmer as that before special importance within the training program for him, so as to develop its ability to govern and control of the members of the body to prevent tension or mitigated, thereby Say it a positive impact on the physical, psychological and skill of the swimmer, It allows investment and employment potential energy as the best investment and use with the opportunity for a swimmer to control his emotions and his performance.

This called that has relaxation training much attention from researchers in the environment, as indicated by Rania (2005)

(Shane, et al. 2006) showsthat the relaxation exercises help the blood flow this works to relieve tension and improves muscle tone.

(Osama, Mohamed, 1992) Indicatedthat focus attention a component of psychological variables most important for the athletes, it is a permanent condition relatively speaking, so that the player is compatible psychologically, and feel the happiness with himself and with others, and be able to achieve the same and take advantage of its capabilities and abilities to the fullest extent as possible to be able to meet the requirements of life.

The numerous and varied studies recently to study the rushing in of in haste and attention deficit coupled with tense muscle and actively kinesthetic

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Plus, and interested in some of which the study of fundamental aspects of this disorder and found from the results that the lack of attention and impulsive of the most important aspects, which lead to problems in the educational process and the difficulty of focus and attention.(Radwa, 2001).

Through observations researcher in the field of swimming have noticed the growing phenomenon of rushing in the performance of the members of the research sample marked by the lack of attention with increased muscle tension, which leads to increased rush in performance to have, and therefore a decline in their condition and regained skill, as noted by the researcher that most programs training direct care by focusing on the physical preparation and skill without paying attention to the psychological aspects, may be due to lack of adequate knowledge of the importance of psychological and setting him impulsive reductions in performance resulting from the lack of focus of attention and the severity of the degree of tension. (Osama,2004).

A continual state of tension makes it easier for a panic attack to occur because the nervoussystem is already highly aroused. In this case, someminor event, such as an unexpected encounter with a friend, can triggerfurther tension that can lead to hyperventilation and panic. Even if you do not have panic attacks, you are more likely to feel anxious, constantlyapprehensive, or have unpleasantobsessive worries when your body is in acontinual state of tension. Through this offer sees the researcher to relax playing an important role in the development of focused attention and reduce the degree of tension, which helps in reaching to the optimum level to focus attention, which leads to high level of skill, but a low level of concentration of attention leads to more negative effects on the level performance skills.

Swimmers ability to relax an important role in improving performance through the ability of the natural relaxation training can speed up the nervous system excitation and inhibition athletes' conversion rate, increased muscle contraction force, to reduce the resistance and energy consumption. (Osama, 1995) from this point the researcher saw use exercises to relax and get to know their impact rushing performance (focus attention and reduce the degree of tension) of the swimmers.

Methods

Six female swimmers from the university swimming team, All participants completed (3) questionnaires to assess health history, muscle tension levels and attention concentration. And identify the record of 50m front crawl swimming before and after eight weeks of relaxation training (three times weekly).

Relaxation exercises come in various forms, such as progressive muscle relaxation, biofeedback and some forms of yoga. Using relaxation as part of your overall workout plan will improve performance in four distinct ways.

Instruments

Grid Concentration Test

Grid Concentration Test is a dynamic approach to determine selective attention capacities and situational awareness.(H. Mohamed, 1998). Translated the version to Arabic languish and the network test can help focus on a good selection of players who can focus their attention much better.

The duration of the test one minute and ask the player to put a sign (/) on the largest possible number of digits that follow the number assigned determined by the coach sports or the psychologist athlete on the diagram on the following page should preferably be selected number is less than the number 65 taking into account that follow numbers a consecutive manner. For example, when you select the starting number 17 should be the player to develop a sign (/) on No. 18 and then No. 19 and No. 20, and so on and not try to put a sign (/) on the number 19 first and then the number 18 seconds.

There is no doubt that the player who recorded the largest number of numbers compared to his colleagues has a better focus. In addition, this test can be used several times with the primary change the number specified in each subsequent visit. You can also change the focus and network numbers to make multiple copies of them with changing their numbers so as not to place players get used to save and remember where the numbers. In addition, taking into account that all the numbers are made up of two numbers, such as (01), (02), and so on. The test can be performed in many experimental situations such as performance, in front of colleagues or add some attention-separated variables.

Muscle Tension Levels Chart

This chart contains observed many of the expressions (face, hand, etc.)

Training Protocol

The objective of relaxing exercises:

- Develop the ability to focus attention by relaxation exercises (muscle, mental, conceptual) to the members of the sample.
- Reduce the degree of stress through relaxation exercises (muscle, mental, conceptual) to the members of the sample.

The foundations of relaxation training mode:

- A sense of the difference between the case muscle during contraction and the diastole to reach the maximum level of muscle relaxation.
- Take into account access to the best level of mental relaxation through relaxation exercises (muscle, mental, conceptual).
- Access to the best level of relaxation conceptual through relaxation exercises (muscle, mental, conceptual)

Relaxation exercises components:

- Relaxation exercises include a range of dimensions and basic themes, namely:
- Walk Slow Sir mobile device.

- Relaxation exercises (muscle - mental and conceptual).
- Breathing exercises.

Axes and the dimensions of relaxation exercises:

Founded the proposed relaxation exercises:

- The first axis: relaxation exercises and includes the following dimensions:
- The first dimension: muscle relaxation (Cascade).
- The second dimension: mental relaxation using (aware of the negative thoughts).
- The third dimension: Conceptual relaxation.
- The second axis: breathe control.
- Time to relax exercises:
- Relaxation exercises applied for (8) weeks, 3 units a week, (24), a training module, and a rate of 90 minutes for each training module facility.

The researcher took into account the availability of the following:

- To be relaxing in a quiet place away from any external stimuli and the temperature is suitable for a comfortable feeling.
- Be swimming in a comfortable position to stay there for a period so performance can continue.
- To focus attention on one idea and one word sequence repeats again and again linked to exhale in the process of breathing every time.
- Explain the purpose of relaxation exercises even contribute to the more conviction relax role in the development of the level of performance.
- Focus on the clothing to be spacious and comfortable with getting rid of everything that impedes the sense of relaxation.
- Taking into account the appropriate distance between the swimmers.

Components of relaxation exercises:

The first axis: relaxation exercises:

The first dimension: muscle relaxation exercises

This represents a dimension of one-dimensional exercises relaxation has been using relaxation cascade gradual Progressive Relaxation as one of the types of relaxed muscle for the implementation of this dimension, which includes the performance of a series of contractions, muscle followed by completely relaxed any that aims to distinguish between contraction and extraversion muscular input to reach the muscle relaxation deep, with taking into account that the transfers from one muscle group to another until relaxation in all muscle groups of the body, and is intended to decrease the tension in the muscles to the point of approaching the absence of muscle activity. And relaxation cascade is a succession of contraction of the muscle group to another until covering all the muscle groups in the body.

The second dimension: mental relaxation:

Dish mental relaxation using (awareness of ideas negative) is one-dimensional primaries in the proposed program and use control method of breath for the implementation of this dimension, considering that the skill of deep breathing right is the key to gaining mental relaxation and freedom from stress and anxiety may rely on the performance of a set of exercises breathing.

The third dimension: Conceptual relaxation:

Rely on a set of scenarios that rely on stop negative thoughts and develop a set of positive phrases.

The second axis: breathing exercises:

Included a set of breathing exercises that rely on diaphragmatic breathing, thoracic breathing, breathing superficial, self-mute and taking payment periods of rest between each exercise and another.

Statistical analysis

All statistical analyses were calculated by the SPSS statistical package. The results were reported as means and standard deviations (SD). Wilcoxon signed-rank test (non-parametric statistical hypothesis test) used to determine the differences. $P<0.05$ was considered as statistically significant.

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Results

Table 1. Show distributed of the study universe

Participations	Universe	Rejected	Main sample	Pilot sample
Helwan university Swimming team	12	2	6	4

Table 2. Age and anthropometric characteristics of the group (mean ± SD).

Variables	Measurement unit	Mean	Standard deviation	Median	skewness
Age	Year	20.32	1.51	20.00	0.64
High	Cm	173.45	6.56	175.00	-0.71
Weight	Kg	62.10	3.34	62.00	0.09
Attention focus	Degree	6.73	1.87	6.00	1.17
Muscle Tension	Degree	7.28	1.63	7.00	0.52
Relax	Degree	12.56	3.28	12.00	0.51
Performance level of 50 m	Degree	5.67	2.34	5.00	0.86

Table 2.Shows the age and anthropometric characteristics of the subjects. No significant differences were observed for the subjects.

Table 3. Shows the z scores before and after the relaxing training on the subjects.

Variables	Ranking number		Meanof ranks		Sum of ranks		Z	Sign.
Attention focus	1.00	5.00	2.25	2.00	2.25	10.00	2.48	0.002
Tension degree	2.00	4.00	2.50	3.33	5.00	13.32	-2.67	0.001
Performance level of 50 crawl	1.00	5.00	2.25	2.00	2.25	10.00	2.48	0.002

Data in Table 3 shows that there is a significant difference in overall Tests between the pre- and post-training.

Discussion

The results of this study showed that the posttests higher scores than the pretests in all measurements.

The researcher attributed these findings to the use of relaxation exercises have a positive effect in rushing in performance (focus attention), where the practice of these exercises leads to the development of the focus of attention to the members of the research sample.

The results of this study consistent with the results of a study of (Samira, 1992; Fatima, 1993; Adel, 1993; Wafa, Azza, 1999; Radwa, 2001), which showed the presence of the effectiveness of the use of relaxation exercises in modifying behavioral problems.

This is what achieves the imposition of the first search, which states that "no statistically significant differences between pre and post measurements in rushing in performance (focus attention) among members of the research sample in favor of the post measurement.

And returns researcher these results to the use of exercises to relax and their positive impact on rushing performance (reduce the degree of tension), where the practice of these exercises lead to reduce the degree of tension among members of the research sample, and that because of its exercises relaxation of movements calm and relaxed mental and psychological taken in the performance This variable conditions in addition to distinguish the performance of movements and take the situation of the body require a high degree of control in all its parts.

The results of this study agree with the results of a study of each of (Osama, 1995; Fatima, 1993; Mohammad, 1998) was reached to alleviate aggression, anxiety and depression in different samples.

Also agree these results with the findings of each of (Khaled, 2001; Naji, Fatima, 2004) were concluded that sports training and exercises relax, and education programs kinetic have a positive effect on the development of skills and aspects of physical and motor skills as well as motor efficiency, psychological and social.

The results are consistent with what refers to him both (Abul Ela, Ahmed, 1993) that prolongation training lead to relax the muscles which helps individual's sense of comfort and ease degree of tension experienced.

This is what achieves the imposition of the second search, which stipulates that no statistically significant differences between pre and post measurements in rushing in performance (degree of tension) of the members of the research sample in favor of the post measurement.

The researcher attributed these results to the positive impact of relaxing exercises and used in performance (focus attention and reduce the degree of tension) of the members of the research sample.

Which highlights the importance of relaxation exercises for an individual in that they gain will power

and patience, focus, gain the physical and psychological immunity, and reduce the stress fact it?

And these results agree with what refers to (Osama, 2004) who noted that the exercises progressive relaxation check acquire the skill to get rid of tension and a sense of fluent regions different body, and the skill of breathing easy lead to acquire the skill relax for athletes, also pointed out that the training relaxing contributes positively in the development of physical performance and then develop athletic performance, which helps performance skills are well-proportioned, and provide mental responses soundly .

As seen (Mohammed, 2002) that relax leads to reduce the impact of the response to stress and help to reach the optimum level of tension and prevent the accumulation of stress by working to reach a low level of stress and access to the degree of deep relaxation, which at least the level of tension, must also be psychological skills development along with the development of performance skills, and practice relaxation exercises work to improve the level of performance skills and increase the knowledge of player skill performed.

Muscles are designed to remain in a relaxed state until required to perform some physical activity. In normal circumstances, a person would show fluctuating patterns of tension and relaxation over the course of the day. The fight or flight response also results in muscle tension. When swimmer feel under stress for long periods they seldom allow the muscle tension levels to become deactivated, and excessive muscle tension may become constant. Eventually, these people become unable to relax or cannot recognize tension: In fact, the tension may appear to be almost relaxed compared with panic attacks. The tension no longer helps them perform their daily tasks, and may even hinder normal activities. Because of the tension,these people may feel jumpy, irritable, tired, or apprehensive, or experience frequent headaches and muscle pain.

Conclusion

In the light of the objectives of the research and imposed and within the nature of the sample and the methodology used and the statistical treatments and outcomes researcher reached the following conclusions:

1. Relaxation exercises have a positive impact on the rousing performance (focus attention) to the members of the research sample in favor of the post measurement.
2. Relaxation exercises have a positive impact on the rousing performance (degree of tension) of the members of the research sample in favor of the post measurement.
3. Relaxation exercises positively affected in the focus of attention by improved (39.90%).
4. Relaxation exercises positively influenced the degree of tension at an improved rate (41.51%).

Recommendations

Through the conclusions that have been reached and within the research sample the researcher recommends the following:

- The use of relaxation exercises within the contents of the training modules Helwan University students swim team
- Need to focus on relaxation exercises because of its positive impact in rushing in performance (focus attention and reduce the degree of tension).
- Conduct similar studies to identify the effect of relaxation exercises on various psychological motives.
- To conduct similar research in various sports activities to confirm the results of the search.

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