The Relationship of Mental Fatigue (Flim) With the Level of Hormone Cortisone and the Performance of Running (100) Meters for Young Players

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Abstract

Mental fatigue works to produce cortisone, which causes a series of reactions in the body, including weakness of the immune system and tension in the large muscles, high blood pressure, and the recurrence of the high rate of cortisone, which leads to the death of brain cells especially in the area which is called the hippocampus, an area necessary for memory. The events of the track and the field require special requirements of physical specifications and physical abilities in addition to the training methods for each of the effectiveness of the success and from these events that require a high level of the effectiveness of running 100 meters. The problem of research was that the work of hormones in the body of the important topics in the field of sports physiological psychology in general and in the track and field activities, especially the activity of 100 meters. The problem of looking for the work of hormones in the body of important topics in the field of sports physiological psychology in general and in the arena and field activities, especially the effectiveness of 100 meters. As the interest of researchers focused on the development of physical abilities, planning and skill and lack of attention to the psychological aspect, which greatly affects the achievement, despite its importance, which is considered the dominant side of the rest of the capacity and mental fatigue of the nervous system and its relationship to achievement and its effects on the secretion of cortisol is considered these variables that affect the players of the effectiveness of the 100 m and therefore affect the results of achievement because the fatigue that gets to the players during fatigue will reduce the activity of the nervous system and therefore cannot show the player all his abilities and do not reach the desired achievement and poor performance. So wanted researchers conducting this study, an attempt to achieve the best results using a test of the tests Vienna system (mental fatigue FLIM) and its relationship to the level of the hormone cortisol, and the aim of the research to identify the relationship between mental fatigue and the level of hormone cortisone and the performance in the 100 meters running for young player. The researchers used the descriptive approach in the method of interrelationships to suit the nature of the problem on the players of the 100 meters advanced to the clubs of Iraq and were selected in a comprehensive inventory, tests used in research, test (mental fatigue). The researchers concluded that there was a significant correlation between mental fatigue (frequency of fusion) (VF) and cortisone concentration as well as performance, in addition, there is a significant correlation between mental fatigue (frequency of flashes) (FF) and the level of hormone cortisone and performance. The researchers recommend that the coach to pay attention to knowledge of the values of mental fatigue to the players in addition to knowing the levels of hormones in order to be able to address the problems facing players and how to overcome them, as the high rate of cortisone evidence of tension in the player and the duty of the coach to address the excitement and tension of the players being a negative impact on their performance.

Keyword: Mental fatigue, Hormone cortisone, Performance and running.

Introduction

Mental fatigue is a problem that has emerged in the arena in recent times, and some researchers are interested in studying it because of the serious effects on the individual and society as a whole. As sports activities at the faculties of Baghdad University, one of the most important sports elements is the role of active role in the success of sports activities conducted by the University of Baghdad in terms of existence,
and the exercise of all these activities commensurate with their tendencies and aspirations.\[1\] The relationship of the individual to his environment takes a negative dimension, which has a devastating effect on the cognitive process as a whole, this creates a sense of helplessness and depletion of effort into a state of mental fatigue.

Therefore, the problems from the point of view of scientists are the basic cognitive problems that arise when the individual experiences fatigue or fatigue as a result of the interaction between perception and thinking to solve the problem, and thus works mental fatigue to the secretion of harmful cortisone and cause this article a series of interactions in the body, including weak immune system and tension in the large muscles, high blood pressure and the high frequency of cortisone, which leads to the death of brain cells, especially in the area called the Horn of Amon, an area necessary for memory.\[2\]

The events of the arena and the field require special requirements of physical specifications and physical capabilities in addition to the training methods for each of the effectiveness of the success and from these events that require a high level of the effectiveness of running 100 meters.\[3\]

The work of hormones in the body of the important topics in the field of sports physiological psychology in general and in the activities of the arena and the field especially the effectiveness of 100 meters, as the interest of researchers focused on the development of physical abilities, planning and skill and lack of attention to the psychological side, which greatly affects the achievement despite the importance of the maximum, which is the side controlling the rest of the capacity and mental fatigue of the nervous system and its relationship to achievement and its effects on the secretion of cortisol hormone are these variables that affect the players of the effectiveness of 100 meters and thus affect the results of achievement because the fatigue that gets players fatigue will reduce the activity of the nervous system and thus the player cannot show all his abilities and do not reach the desired achievement and poor performance so the researchers wanted to conduct this study to try to achieve the best results using a test of the tests of the system of Vienna (mental fatigue FLIM) Cortisol, the goal of the research was to identify the relationship between mental fatigue and the level of cortisone and the completion of running 100 meters for young players.

The Practical Part

The Procedures of Field Research

The researchers used the descriptive approach in the method of interconnectivity to suit the nature of the problem on the players running 100 meters applicants to the clubs of Iraq and were selected in a comprehensive manner.

Tests

Mental Fatigue Test

The researchers adopted a test (mental fatigue) prepared by the Austrian company Schofred. The test is part of the Vienna Test System,\[4\] which is located in the Psychological Laboratory of the Center for Psychological Research at the University of Baghdad, which is the first modern psychiatric laboratory of its kind in Iraq, as we have already noted. It is also one of the most modern methods of mental fatigue testing in the world and ISO certified.

Purpose of the Test

The purpose of the test is two parts (the external flash tube unit and the flash fusion frequency test). This unit also relates to the computer using the USP port:

Frequency Fusion Test

It is a control test for: Flickr Fusion Unit (USP) and for complete test management. This test was designed and prepared to assess central nervous activity with the help of Threshold values, when a light frequency is determined as a constant light, and this test is used with adults. The physiological studies have shown that the activity of the organism is controlled centrally. The frequency of fusion / flashes along with other criteria (such as SCR and EEG) promise to be an indicator of the ability of central nervous activity and a test of mental fatigue and alertness.

The test is applied by examining the screen of the flashing tube unit and focusing its attention on the center of the light focus located inside the end of the unit, which is
similar to looking inside a given lens. It is then asked to place its finger on the button outside the unit and above it from the end of the device. The device measures the amount of activity and total mental fatigue of the subjects, within the increasing process, as the frequency of flashing light (flashing flash) is increased until the constant light is realized. In the dwindling process, the high-frequency lighting that the respondent perceives as static is minimized until it is self-perceived as flashing. The respondent must identify each change in perception by pressing a particular button as mentioned earlier. The critical frequency value is then stored.

The Test of Cortisone Level [5]

Objective of the Test
Measure the level of cortisol, which is produced by the adrenal cortex.

The Tools of Used
Specific dyes for measuring the hormone and the laser device for analysis.

The Method of Registration
The device gives the result of the hormone from the blood sample that was withdrawn from the sample in advance.

The Experience of Main
The researcher carried out the main experiment within the Center for Psychosocial Research at the University of Baghdad on 13/4/2017 on the players of clubs and before the experiment was carried out the following:

- Subjects were asked to take a minimum of sleep (7) hours at least before the examination.
- The condition of eating breakfast.
- All external and internal variables are controlled within the psychological laboratory (temperature 21-25), noise, lighting, and white noise. The psychological fluency scale was distributed on the sample after testing for mental fatigue on the Vienna system.

Statistical Means
The researchers used the Statistical Bulletin of Social Sciences (SPSS)

Results and Discussion
This axis included the presentation of the results of the mental fatigue tests (fusion frequency) (VF) and mental fatigue (Flicker frequency) (FF) and its relationship with the hormone cortisone and achievement in the players ran 100 meters of youth demonstrated by the system of the tests of Vienna for examination and evaluation Psychological analysis of the research sample after being processed statistically and in line with the objectives.

Table 1 : Shows the values of arithmetic mean, standard deviation, correlation coefficient of mental fatigue (fusion frequency) (VF), mental fatigue (Flicker frequency) (FF) and its relation to cortisone concentration and achievement in the 100 meters running youth.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Measuring unit</th>
<th>Mean</th>
<th>STD.EV</th>
<th>(r)cortisol hormone</th>
<th>(r) performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency fusion (VF)</td>
<td>Hz</td>
<td>31.9</td>
<td>12.915</td>
<td>0.69</td>
<td>0.734</td>
</tr>
<tr>
<td>Flashes frequency (FF)</td>
<td>Hz</td>
<td>38.86</td>
<td>19.27</td>
<td>0.58</td>
<td>0.63</td>
</tr>
<tr>
<td>Cortisol hormone</td>
<td>Ng/ml</td>
<td>125.58</td>
<td>5.28</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Performance</td>
<td>A second</td>
<td>11.02</td>
<td>1.74</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

The table (1) shows that there is a significant correlation between mental fatigue (frequency of integration) (VF) and with the level of hormone cortisol and achievement, and there is a significant correlation between mental fatigue (frequency of flashes) (FF) and with the level of hormone cortisol and achievement, as mental fatigue is one of the most prominent. The manifestations of disorders of mental processes as mental fatigue is linked to mental processes, which if one is exposed to sensory perception or attention or memory as these effects withdraw on the course of the mental process as a whole and the overall perception and the wrong responses or disruption in the treatments, Mental fatigue plays an important role, by its negative effects also in the processes of sensory perception due to the fatigue that affects the senses and the negative effects it draws on the mental processes following sensory perception such as Attention, memory, etc., resulting in obstruction and disruption or total disruption in the mechanisms of control and control. [7]
According to the results show that the reflection of mental fatigue worked to increase tension, which in turn increased the level of hormone cortisol in response to psychological pressure. There is a close relationship between the emotion and the adrenal gland. Increasing the levels of the gland increases the amount of blood sugar.\(^8\) Cortisol hormone (produced by the adrenal cortex when necessary) acts as an activator for metabolic processes, and responds to sudden pressure). And cortisol hormone causes hyperglycemia because of its speed. In the conversion of the starch of animal starch to liver glucose and helps to convert proteins to carbohydrates and maintain the existence of a fixed amount in the clokogen in the muscle and increase the processes of destruction of proteins and result in this increase the output of nitrogen wastes and prevent the formation of proteins of amino acids and transform the Ah Additional amino to carbohydrates and accelerate fat demolition process, leading to increased concentration of ketone bodies in the blood and urine.\(^9\)

![Figure1](image)

**Figure1:** Explain the values of arithmetic mean, standard deviation, correlation coefficient of mental fatigue (fusion frequency) (VF), mental fatigue (Flickr frequency) (FF) and its relation to cortisol concentration and achievement in the 100 meters running youth.

**Conclusions**

The researchers conclude that there is a significant correlation between mental fatigue (frequency of integration) (VF) and cortisol level and achievement, and there is a significant correlation between mental fatigue (frequency of flashes) (FF) and with the level of hormone cortisol and achievement, and the use and adoption of the current research tool. Mental fatigue) within the system of the Vienna tests in various research and studies related to the research variable because of its sincerity and consistency in measuring what was put for it.

**Recommendations**

The researchers recommend that the coach to pay attention to knowledge of the values of mental fatigue to the players in addition to knowing the levels of hormones in order to be able to address the problems facing the players and how to overcome them, as the high rate of cortisol evidence of tension in the player and the duty of the coach to address the excitement and tension of the players being Negative impact on their performance. And the development of educational and psychological research to the level of modern technology and the use of modern computer-assisted psychological tests. Conducting a study on mental fatigue and its relation to some physiological variables.

**References**


