



**The psychological effects of wars and their repercussions on distracting attention and its treatment by using the comprehensive cognitive Rehcom system for students of Physical Education and Sports Sciences department**

**Prof. Dr. Alaa Abdullah Hussein**

College of Tourism Sciences , University of Mosul , Iraq

**Abstract**

Nineveh governorate has been subjected to terrorist attacks and wars that lasted for a long period of time. These continuous and long wars left a great psychological pressure on many people. The conscious and educated young college students are the future generation who will lead the nation and shape its destiny. Continuous exposure to stress and psychological pressure affects the psychological and mental health of an individual. It increases the feeling of fatigue and stress and affects the level of attention and focus, weakening him/her in addition to a group of damages that harm the mental abilities of the brain which causes distraction. Lack of attention and focus leads to limited receptivity and processing capacity, low information processing speed, increased fatigue especially under stress, and an increased tendency to be distracted. (Sturm,

1990). The researcher used the descriptive method and the survey because of its suitability with the nature of the problem.

The research community included female students of the Department of Physical Education and Sports Sciences, the second stage of the College of Education for Girls, and the research sample included the entire research community. If the test was performed on (40) female students, and two female students were excluded for not participating in the test.

In order to achieve the research objectives, the tests were determined by specialists in sports psychology and the psychological laboratory in the Iraqi Ministry of Higher Education and Scientific Research.

The researcher used the Rehcom knowledge system to conduct tests and training.

The Rehcom system is called the comprehensive system, developed to bring together healthy and sick people in the field of diagnosis and computerized training.

The programs of this system were developed on the basis of transforming and harnessing cognitive abilities into positive capabilities. It includes testing and diagnostic units on nine test batteries.

It also consists of sub-programs of rehabilitative training designed to suit the ages, starting from the age of six years and the system consists of:

The researcher used the split attention test, which includes measuring two types of attention. Auditory attention and visual attention. A training program available

in the system (a multi-faceted program) was used to train the members of the research sample and improve their attention.

The results caused a distraction of attention among some of the research sample, and upon applying the treatment program, the results led to a significant improvement in attention.

**Keywords:** wars repercussions, distracting attention, Rehcom system

## **1. Introduction**

Nineveh governorate has been subjected to terrorist attacks and wars that lasted for a long period of time. These continuous long wars left a great psychological pressure on many people. The conscious and educated college students are the future generation who will lead the nation and shape its destiny.

Continuous exposure to stress and psychological pressure affects the psychological and mental health of an individual. It increases the feeling of fatigue and stress and affects the level of attention and focus, weakening him/her in addition to a group of damages that harm the mental abilities of the brain which lead to distraction. Lack of attention and focus causes limited receptivity and processing capacity, low information processing speed, increased fatigue especially under stress, and an increased tendency to be distracted. (Sturm, 1990)

Mental processes are known as physiological processes that occur in the brain and interact with the environment and convert information from one form to another. They are invisible and play an important role in a person's life as they contribute to the learning process. We cannot perform any movement or cognitive activity except through mental processes. (Khayoon, 2002)

Attention is one of the mental processes that play an important role in an individual's ability to communicate with the surrounding environment, which is reflected in his choice of different and appropriate sensory stimuli. Therefore, he can not only accurately analyze and perceive them, but respond to them in a way that makes him adapt to his internal or external environment. Attention has received great care from Researchers who consider it the process that forms the nerve of the psychological system in general, through which an individual can acquire many skills and form many behavioral habits (Mesulam, 1985)

Split attention is one of the types of attention, which is our brain's ability to pay attention to different sensory stimuli at the same time, and to respond to different demands. (Stuss & Benson, 1984)

It also allows us to process information and perform tasks successfully. This cognitive skill is very important because it allows us to respond effectively to various life activities.

There are many examples of divided attention in the educational field, including: Listening to the professor as he explains while looking at the blackboard, picture, or using a means of clarification. The importance of the research is evidenced by the fact that it is the first study of its kind that measures, diagnoses and addresses distraction using the Rehcom global computerized knowledge system. The results of this system are very accurate and not subject to error, and its results are recognized by the Iraqi Ministry of Higher Education and Scientific Research.

## **2. The Problem**

Iraq was exposed to many wars. Many studies and research have proven that people who lived through harsh war conditions, or who were displaced from their areas, are more vulnerable to depression, psychological trauma, and severe psychological distress than other people who have not been displaced. The effects of wars may not appear directly on humans while its indirect impact appears on the cognitive abilities of individuals. So we see the individual being distracted, indifferent, weak in alertness and weak in memory. From here, the research problem appeared in measuring and diagnosing (divided) attention deficit among female students of the Department of Physical Education and Sports Sciences. The students were subjected to a training program to improve attention, using the comprehensive knowledge system of Rehcom.

### **3 The Aims of the Study**

1. Measuring the divided attention of the research sample.
2. Identifying the psychological effects of wars and their repercussions on distraction.
3. Treatment of distraction using the comprehensive cognitive Rehcom system among the subjects of the research sample.

### **4 The Hypotheses of the Study**

1. The researcher assumed that the members of the research sample suffer from distraction.
2. The use of distraction training programs improves the attention of the research sample.

## **5 limits**

1. The human field: Female students of the Department of Physical Education and Sports Sciences, the second stage of the College of Education for Girls.
2. Spatial domain: the classrooms at the University of Mosul.
3. Time domain: the academic year 2019-2020.

## **6 Basic Terms**

### **6 1-The Rehcom System:**

- The computer-aided cognitive system for psychological support and rehabilitation is an internationally approved system designed by scientists specializing in psychiatry, neurology, and clinical sciences
- It is called the comprehensive system because it is suitable for healthy people and is treated and trained at the same time. It is considered a complete technology system that contains tests for examination and diagnosis, and training programs for post-diagnosis evaluation that can be applied and used.
- It consists of Hardware / Keyboard / License protection tool, operating system software, testing and diagnostic modules, and training programs (AbdelGhani, 2018. (Figure 1)

### **6-2 Attention:**

Attention is defined as preparing and directing the senses to receive external stimuli (Cheon, 2002).

### **6-3 Split attention:**

The researcher defined it procedurally as the ability of our brain to pay attention to two different stimuli at the same time using more than one sense, and to respond to the multiple requirements of our surroundings.

#### **6-4 Distraction:**

It means diverting a person's attention from his current task. The occurrence of distraction and frequent interruptions leads to the cancellation and suspension of his activity, which leads to the loss of his time as if everything has taken possession of his time and interest without awareness of him. It requires a lot of effort to return to his current mission (Al-Watifi, 2002)

### **7. Procedures**

#### **7.1 Methodology**

The researcher used the descriptive method by the survey method because of his sensitivity to the nature of the problem.

#### **7.2 Community and Sample**

The research community included female students of the Department of Physical Education and Sports Sciences, the second stage of the College of Education for Girls

The research sample included the entire research community. The test was performed on (40) female students, and two female students were excluded for not participating in the test.

#### **7.3 Data Collection**

### **7.3.1 Tools**

In order to achieve the research objectives, the tests were determined by specialists in sports psychology and the psychological laboratory in the Iraqi Ministry of Higher Education and Scientific Research.

The researcher used the Rehcom knowledge system to conduct tests and training.

First - Description of the Rehcom system

The Rehcom system is called the comprehensive system, developed to bring together healthy and sick people in the field of diagnosis and computerized training.

The programs of this system were developed on the basis of transforming and harnessing cognitive abilities into positive capabilities. It includes testing and diagnostic units on nine test batteries.

It also consists of sub-programs of rehabilitative training designed to suit the ages, starting from the age of six years

Second - the components of the system

- The components of the system can be divided into:
- Hardware / Keyboard
- Operating system software, testing and diagnostic modules, and training programs.

Third - the work of the system



## Screening, Diagnostic and Test Application modules

The examination units were established in order to obtain a diagnosis and evaluation before starting treatment and training, and through them the best program for the subject is chosen according to the following steps:

A private client interface appears, and the private information is filled in and saved (Appendix 1)

- The first stage: guiding the subject through information that appears on the screen and the test is chosen. In our research split attention is chosen (Appendix 2)

- The training phase: an exercise for the subject with a warning. If he makes a mistake during the exercise application, he will be guided by a note that appears on the screen and the exercise is repeated until he performs the application without any errors.

- The start of the test: in which the guide is not allowed to intervene, since this stage will be considered in the final evaluation, and any intervention will give inaccurate results. (Appendix 3)

- Evaluation: After completing the test, the results appear in an automatic way that cannot be interfered with. They are in the form of tables and data for each stage of the test and determine the number of wrong and correct answers, as well as the percentage, T and standard, and the report recommends training or not the need for training.

There are many models for displaying reports which are characterized by ease of interpretation, especially for beginners, and the reports appear in different colors and each color has a specific indication. The standard score appears within the screen displays and includes (z value) or the standard T score (t norm) and percentile ranks (pr) and the researcher can adopt one of the criteria to interpret the results. . (Abdul Ghani, (2018)

#### **Fourth, test description**

The subject must work on a parallel visual and auditory task.

Audio-visual requirements

Visual mission:

In the center of the screen, a square field with (5) circles is displayed. Figure (1)

All circuits are open (Figure 1).

While performing the task, the position of the hatches changes. The position of the circles has not changed.

When a closed circle appears in the square field (Fig. 2), the patient should press the OK button as soon as possible. Only one circuit can be closed at any time.

#### **Auditory task:**

Simultaneously with each group of circles, the patient hears two notes, alternating between a high tone and a low tone. When the same tone is sounded twice in a row, the patient must press the OK button as soon as possible.

Settings: The scan starts with an exercise. To successfully complete the exercise, the patient must react to relevant visual as well as related auditory stimuli after which the actual examination begins.

Five circles with holes must be observed in variable positions. When the circuit is closed, the patient must simultaneously press the OK button, the high and low tones are displayed alternately. When the same tone is sounded twice in a row, the patient is forced to press the OK button.

Test results: The results of each laboratory are shown separately, as in the following figures: Figure (7.8)

3-4 Time of doing the test

The split attention test was taken on (8-11-2019).

### **7.3.2 Statistical Means**

The researcher used the arithmetic mean, standard deviation, and weight percentage using the (spss) program. (Al-Rufoo ', 2017)

## **8. Findings and Discussion**

### **8.1 The results of split attention among the members of the research sample**

Table (1) shows the statistical parameters of the divided attention of the subjects of the research sample. From the table the number of omissions or omissions of the audio stimuli. The number of omissions and omissions of the visual stimuli were calculated separately. And the researcher relied on comparing the results with a Gaussian curve. The researcher found that the auditory and visual

attention of the research sample was within the normal level. Figure 9 represents the normal Gaussian distribution.

## **8.2 Presentation of the results of the research sample who suffer from auditory and visual distraction.**

Table (2) shows the statistical parameters of the research sample who suffer from auditory and visual distraction

### **8.2.1 Discussion**

From Table (1), and through our observation of the arithmetic mean, we can determine that the visual attention of the research sample is better than the auditory attention, so that the number of omissions of the visual stimuli were less than the number of omissions of the auditory stimuli.

Our ability to pay attention and perform multiple tasks simultaneously is limited. The attention section leads to a decrease in the performance of the actions that take place simultaneously, which leads to the superiority of visual attention over auditory attention. This is what the British psychologist (Broadbent) confirmed about attention, which believes that the world around us consists of thousands of emotions that cannot be addressed together in The cognitive perception system, which prompts us to pay attention to some and neglect others (Zaghloul and Zaghloul, B.C.).

5. From Table (2), it is clear that there is a percentage of the research sample who suffer from auditory distraction, and there is another group who suffer from visual distraction.

The tests conducted on the system recorded a defect in the auditory and visual attention of some members of the sample. This made us follow training programs to improve the attention of members of the research sample who suffer from distraction if the system diagnoses the defect in each individual and identifies appropriate programs for each individual that improve his ability to pay attention. And as follows:

### **8.2.2. Distraction Training Program:**

The training program (multi-faceted) was used

Program description:

The Rehacom unit contains the (Divided Attention) training program that contains fourteen levels, and each level contains instructions that differ from one level to another.

And for each level containing new missions, instructions are provided before the mission starts. At each level, a percentage value is calculated. This percentage represents those tasks that were answered correctly during the specified reaction time in relation to the total number of relevant organisms. Whether the driver advances to the next level depends on a certain number of correct responses that have an average greater than the percentage value included in the level setting.

An individual works as a train driver who sits in the cab (or driver's cabin) on a train and has the following job:

The patient should carefully monitor the control panel of the cross-country train, and react to various events as they occur. At first, only the acceleration of the

train must be changed. Later, as difficulty levels increase, more missions are added; Different levels of interest and special reactions expected from the subject.

On the screen, the view is simulated through the windshield of the train and the driver's control panel (Fig.10). Through the window, you can see the railroad tracks that disappear into the distance. When the train is running, by pressing the cursor button on the RehaCom keyboard, unrelated stimuli (such as trees, houses, shrubs, and rocks) as well as related stimuli (such as train signals) appear on the screen. No patient reaction is expected when it comes to unrelated things. When it comes to related things (for example, a stop sign or a man waving a red flag over his head), the patient must stop the train by pressing the OK button. In addition to the differences in approaching related objects, the state of irrelevant objects, train tracks, and countryside color can also be changed.

Session duration: The duration of the session ranges from (25 to 30) minutes and lasts for three sessions per week.

Program results: The results of the training program appear after each treatment session. The level of the individual is determined, and the results are shown in the form of numbers and graphical forms. Figure (11) shows the results of the first session. Figure (12) shows the results of the sessions

By observing the sessions of the training program, we notice a noticeable improvement in the divided attention of the research sample who suffer from distracted attention. The level of progress in the training program is determined through numerical tables and graphs (Figure 12)

## Refernces

Abdul-Ghani, Hoda Jamil, Re -com Knowledge System, Al-Sadiq Cultural House, Iraq, 2019.

Al-Rufou ', Atef Eid, Educational Statistics, Book Wall House, Jordan, 2017.

Al-Zaghloul, Rafie Al-Naseer, Al-Zaghloul, Imad Abdel-Rahim, Dar Al-Shorouk, Jordan, B.

Yaroub Khayoun: Kinetic Learning between Principle and Practice, Baghdad, Dar Al Kutub for Printing. 2002.

Al-Wattifi, Firas Kassoub Rashid, Mental Processes between Stimulus and Response, Dar Al-Dhia Publishing, Najaf, 2020.

Mesulam, M. M. (Ed.). (1985). Attention, confusional states, and neglect. In: Mesulam M.M., ed. Principles of behavioral neurology. Philadelphia: Davis, 125-168 Oxford University Press

Sturm, W., & Büssing, A. (1986). Einfluss der Aufgabenkomplexität auf hirnorganische Reaktionsbeeinträchtigungen - Hirnschädigung oder Patienteneffekt? European Archives of Psychiatry and Clinical Neuroscience, 235(4), 214–220.

Sturm, W. (1990): Neuropsychologische Therapie von hirnschädigungsbedingten Aufmerksamkeitsstörungen. Zeitschrift für Neuropsychologie, 1(1), 23–31.

[https://commons.wikimedia.org/wiki/File:Normal\\_distribution\\_pdf.png#mw-jump-to-license](https://commons.wikimedia.org/wiki/File:Normal_distribution_pdf.png#mw-jump-to-license)

10- <https://www.cognifit.com/ar/science/cognitive-skills/divided-attention>

**Tables**

Table (1) shows the statistical parameters of the divided attention of the research sample 's subjects

<b>Standard deviation</b>	<b>Arithmetic means</b>	<b>Sample size</b>	<b><u>Statistical processors</u></b>  <b>Tests</b>
<b>3.23</b>	<b>2.64</b>	<b>40</b>	<b>Audio</b>
<b>1.82</b>	<b>1.2</b>	<b>40</b>	<b>Visual</b>

Table (2) shows the statistical parameters of the research sample who suffer from auditory distraction and visual .distraction







Figure (2)

Table (2) shows the statistical parameters of the research sample who suffer from auditory distraction and visual .distraction

<p><u>The</u> <u>percentage</u> <u>of people</u> <u>who enjoy</u> <u>normal</u> <u>attention</u> <u>%</u></p>	<p><u>The Test</u> <u>percentages</u> <u>For the</u> <u>number of</u> <u>members of</u> <u>the sample</u> <u>Sufferers</u> <u>Of</u> <u>distraction</u></p>	<p><u>Statistical</u> <u>processors</u></p> <p style="text-align: right;"><b>Tests</b></p>
---	---	--

	<u>%</u>	
<b>76%</b>	<b>24%</b>	<b>Audio</b>
<b>77.5%</b>	<b>22.5%</b>	<b>Visual</b>

Shapes

(Figure 1)



(Figure 2)

Registration form for RehaCom system. Fields include: لقب المتخاطبة (Recipient Name), الاسم العائلي (Family Name), الاسم الشخصي (Personal Name), لقب إضافي (Additional Name), تاريخ الميلاد (Date of Birth) dd/MM/yyyy, الجنس (Gender) with radio buttons for رجل (Male) and امرأة (Female), اللغة (Language) set to Arabic (Iraq). Address fields include: الرمز البريدي/المدينة (Postcode/City), الشارح (Street), الهاتف (Phone), البريد الإلكتروني (Email), اسم التسجيل (Registration Name), كلمة السر (Password), and إعادة كتابة كلمة السر (Repeat Password). A note states: الحقوق الملونة باللون الأخضر حقوق إجبارية يجب ملؤها (Green highlighted rights are mandatory to be filled).

(Figure 3)



Fig (4)



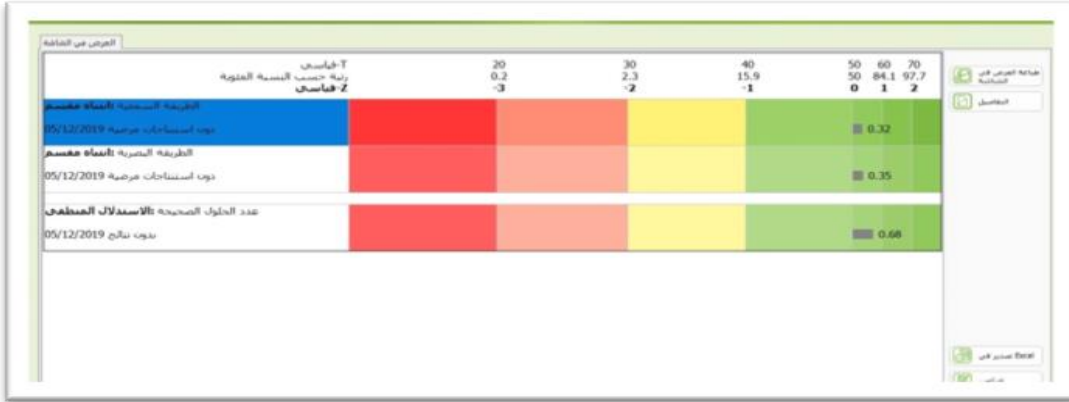
(Figure (5



(Figure (6



Fig. 7



Fig(8)

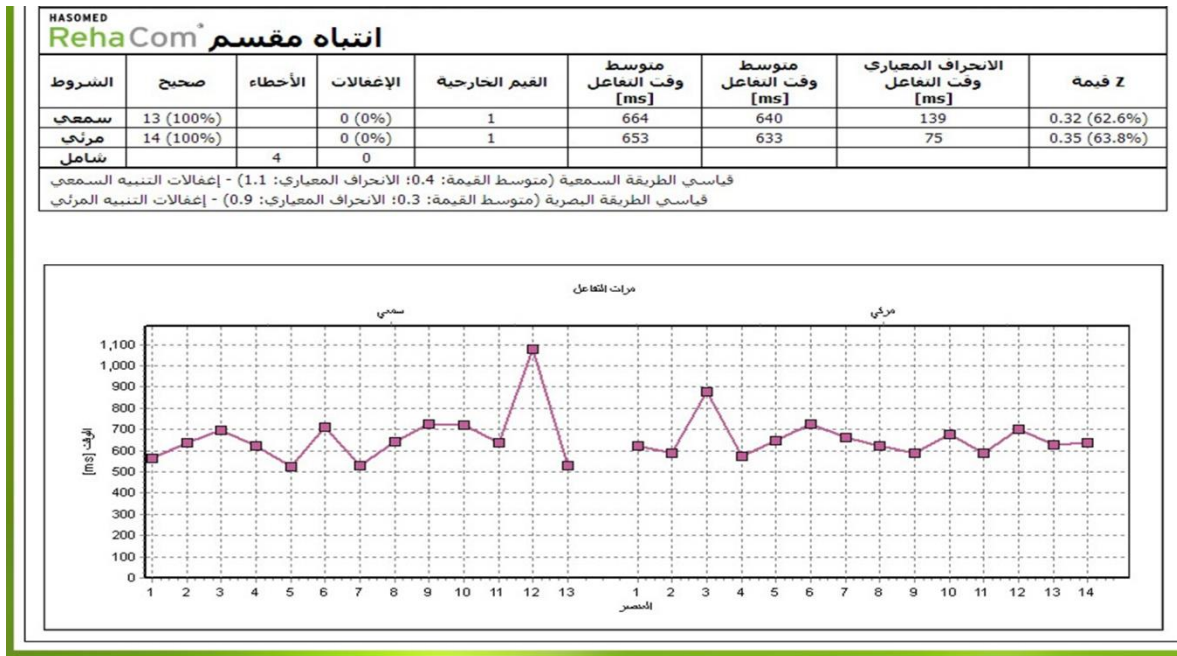
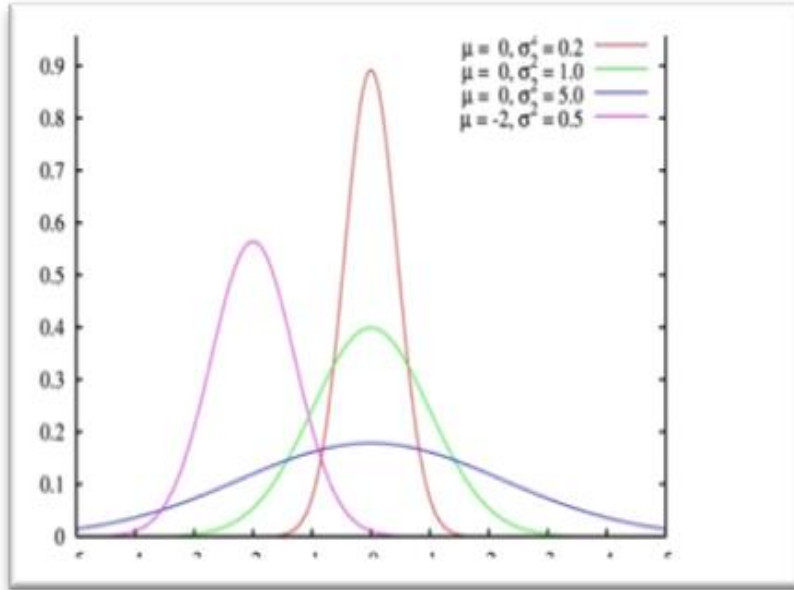
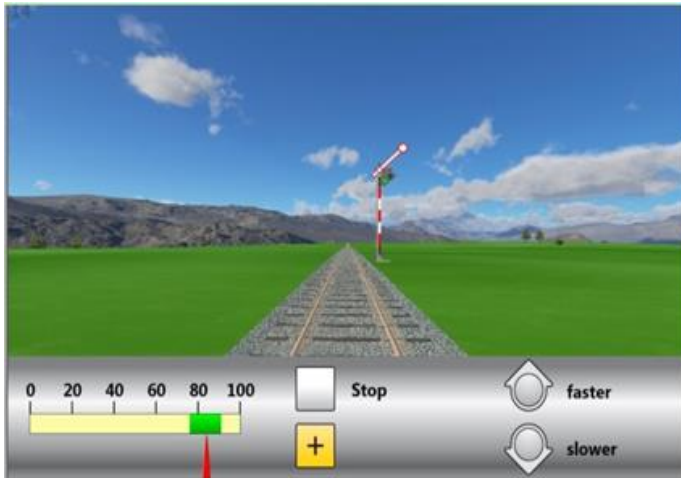


Fig (9)



**Fig(10)**



**(Fig) (11)**



Fig(12)

