# بسم الله الرحمن الرحيم


MONA MAGHRABY

# شبكة المعلومات الجامعية

# التوثيق الالكتروني والميكروفيلم

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# جامعة عين شمس

# التوثيق الإلكتروني والميكروفيلم

# قسم

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***MONA MAGHRABY***

# Evaluation of Electroconvulsive therapy in Maamoura Psychiatric Hospital: Clinical practice and clinicians' Attitudes.

*Thesis*

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**By**

**Dr. Khaled Mahmoud Areda**

M.B.B.CH

**Under Supervisors**

**Prof. Dr. Hanan Mohamed Ezzeldin Azzam**

Professor of Psychiatry Ain shams university

**Ass. Prof. Dr. Reem El Sayed Mohamed Hashem**

Assistant Professor of Psychiatry Ain shams university

**Dr. Ahmed Adel M. Abd-Elgawad**

Lecturer of Psychiatry, Ain shams university

**Faculty of Medicine**
**Ain Shams University**


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✍ *Khaled Mahmoud Areda*

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# Introduction

Despite the efforts over the past 50 years of antipsychiatry movements Electroconvulsive therapy (ECT) remains as effective psychiatric treatment. ECT is used with informed consent in treatment-resistant major depressive disorder, treatment-resistant catatonia, or prolonged or severe mania, and in conditions where "there is a need for rapid, definitive response because of the severity of a psychiatric or medical condition (e.g., when illness is characterized by stupor, marked psycho-motor retardation, depressive delusions or hallucinations, or life-threatening physical exhaustion associated with mania (**FDA Executive Summary, 2011**).

Despite decades of research, the exact mechanism of action of ECT remains elusive. Neuroimaging studies in people who have had ECT, investigating differences between responders and no responders, and people who relapse, find that responders have anticonvulsant effects mostly in the frontal lobes, which corresponds to immediate responses, and neurotrophic effects primarily in the medial temporal lobe. The anticonvulsant effects are decreased blood flow and decreased metabolism, while the neurotrophic effects are opposite - increased perfusion and metabolism, as well as increased volume of the hippocampus **(Abbot, 2014).**

As of 2001, it was estimated that about one million people received ECT annually. There is wide variation in ECT use between different countries, different hospitals, and different psychiatrists. International practice varies considerably from

widespread use of the therapy in many Western countries to a small minority of countries that do not use ECT at all, such as Slovenia About 70 percent of ECT patients are women. This may be due to the fact that women are more likely to be diagnosed with depression. Older and more affluent patients are also more likely to receive ECT. The use of ECT is not as common in ethnic minorities **(Leiknes, 2012).**

Surveys of public opinion, the testimony of former patients, legal restrictions on the use of ECT and disputes as to the efficacy, ethics and adverse effects of ECT within the psychiatric and wider medical community indicate that the use of ECT remains controversial. This is reflected in the January 2011 vote by the FDA's Neurological Devices Advisory Panel to recommend that FDA maintain ECT devices in the Class III device category for high risk devices except for patients suffering from catatonia. This may result in the manufacturers of such devices having to do controlled trials on their safety and efficacy for the first time. In justifying their position, panelists referred to the memory loss associated with ECT and the lack of long-term data **(Fisher, 2012).**

A questionnaire survey of 379 members of the general public in Australia indicated that more than 60% of respondents had some knowledge about the main aspects of ECT. Participants were generally opposed to the use of ECT on depressed individuals with psychosocial issues, on children, and on involuntary patients. Public perceptions of ECT were found to be mainly negative **(Helmes, Drake 2007).**

In the last decade, patients have returned to using ECT to treat various mental illnesses including depression and bipolar disorder. Overcoming the looming controversy has proven difficult for doctors and scientists, and various campaigns to challenge negative stereotypes have gained popularity in the past few years. In 2014, the American Psychiatric Association launched a petition to reclassify ECT as a low-risk treatment **(Miller and Shelley, 2017).**

Though many people still believe ECT to be an inhumane procedure, many pro-ECT patients have publicly come forward with their positive response to the treatment. One patient by the name of Shelley Miller claims that "medications have a success rate of 50-60% of patients getting better, while ECT succeeds at a rate of 70-90 % with the combined support of patients and doctors, ECT is slowly challenging stereotypes and making its way back into the medical community. However, the negative stigma of ECT still maintains the upper hand in society today**(Levin, Saul2008)**.

# Aim of the Study

1. To assess knowledge about ECT guidelines .
2. To assess Attitudes towards ECT.
3. To review actual practice and how competent with ECT guidelines.

# History of Electroconvulsive Treatment

The traditional litany on the history of the medical uses of electricity, beginning with the Roman use of electric fish to treat headaches is simply beside the point; electroconvulsive therapy (ECT) evolved solely as a result of Ladislaus von Meduna's original investigations on the effects of camphor-induced convulsions in schizophrenic patients. It was the chronology of the medical (and specifically, psychiatric) uses of convulsions that provides the appropriate historical perspective to his work (**Payne,2009).**

## Camphor oil induced convulsions:

According to **Mowbray (1959),** Paracelsus, the 16th-century Swiss physician and alchemist, gave camphor by mouth to produce convulsions and to cure lunacy. The first published citation, however, is generally attributed to Leopold von Auenbrugger, the originator of the percussion method of examining the heart and lungs, who, in 1764, treated mania with camphor every 2 hours to the point of convulsions **(Mowbray, 1959).**

The next publication (and the first in English) was by one Dr. Oliver, whose case report in 1785 in the London Medical Journal described the successful use of camphor in a patient who had been diagnosed with mania with few intervals of psychoses **(Rzesnitzek,2015).**

## Meduna and the origins of convulsive therapy:

Meduna's decision to treat schizophrenic patients by inducing epileptic seizures stemmed directly from the results of

neuropathologic studies ***in which he observed an overwhelming and almost crushing growth of the glial cells in the brains of epileptic patients compared with an equally evident lack of glial-cell growth in the brains of schizophrenic patients.***

He observed that epileptic patients had a much better prognosis if they were also diagnosed as having schizophrenia; after unsatisfactory animal trials of strychnine, thebaine, nikethamide, caffeine, brucine, and absinthe, Meduna learned from the International League Against Epilepsy that one of its officers had written a monograph about producing artificial convulsions with camphor monobromide. Choosing the less toxic simple camphor, Meduna successfully produced experimental epilepsy in guinea pigs. Two months later, on January 23, 1934, Meduna injected camphor oil into a schizophrenic patient who had been in a catatonic stupor for 4 years, never moving, never eating, being incontinent, and requiring tube feeding **(Fink,2001).**

*After 45 minutes of anxious and fearful waiting the patient suddenly had a classical epileptic attack that lasted 60 seconds.*

Thus, convulsive therapy was born. The patient went on to full recovery after a short series of seizures, as did the next 5 patients treated; by the end of a year, Meduna had collected results, which he then published, *from a sample of 26 schizophrenic patients: 10 who recovered, 3 who enjoyed good results, and 13 who did not change* **(Meduna, 1937).**

Meduna soon replaced camphor with the chemically related pentylenetetrazol (Cardiazol, Metrazol), which he preferred because of its solubility and rapid onset of action **(Meduna,1985).**

**The Rise of Electrical Stimulation:**

Von Fritsch and Hitzig had already demonstrated that epileptic seizures could be produced in dogs by electrical stimulation of the exposed brain, and von Schilf had suggested the feasibility of producing convulsions in humans with extracerebral electrodes **(Hagner, 2012).**

In 1934, Chiauzzi, working in Cerletti's laboratory, produced seizures in animals by passing a 50-Hz, 220-V stimulus for 0.25 seconds across electrodes placed in the mouth and rectum; in May of 1937, Bini, another of Cerletti's assistants (and himself a fine clinician who later wrote a leading Italian textbook on psychiatry), reported similar animal studies at an international meeting in Munsingen, Switzerland, on new therapies for schizophrenia **(Cerletti, 1950).**

This goal was soon accomplished, and the first patient to receive electroconvulsive therapy was a 39-year-old unidentified man found wandering about the train station without a ticket. He was delusional, hallucinating, and gesticulating, and alternated between periods of mutism and incomprehensible, neologistic speech **(Cerletti, 1950).**

After he was observed for several weeks, he was diagnosed as having schizophrenia; he received his first treatment on 11 April 1938. Present were Cerletti, Bini, and only one or two others. An initial stimulus of 80 V for 0.25 seconds was subconvulsive. Two subsequent stimuli of the same voltage, but