

1 The Study Electro Shock Therapy (EST)

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5 **Abstract**

6 Shock therapy is one of the treatment methods for psychiatric patients, which is associated
7 with a low risk and in financial terms it also benefits the patient and the health system. Mild
8 Electroconvulsive device, which only affects the skin (and not the nervous system), operates
9 on the basis of classical conditioning. EST device has some morphological features including
10 the size and much weight that causes anxiety in the patient. It also has a mechanism that can
11 be fed with 220V. Consequently, the concentration of physician is considerably reduced and
12 also, it causes negative effects on the patient. In behavioral therapy, reducing the patient's
13 anxiety is a very important point that should be taken into consideration. Studying the effect
14 of electroshock therapy on the cognitive state of patients hospitalized in the psychiatric ward
15 showed that shortage and lack of knowledge cause fear and confusion and this, intensifies the
16 cognitive effects that appear after the electroconvulsive therapy. Therefore, it is necessary for
17 the nurses to provide their patients with appropriate and enough information before the
18 implementation of this therapy. In this paper we offer a new device that consists of mild
19 Electroconvulsive system, warning lights, warning voice, and small size and shape which has
20 been designed on the basis of golden rate¹. Management system of the device is done via
21 remote control and consequently, the patient doesn't experience any anxiety in the course of
22 treatment, rather it increases the performance of attending physician and facilitates the
23 treatment.

25 **Index terms**— shock therapy, wrist shock device for the elimination of harmful habits, golden rate, EST system.

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42 purpose of preventing them from hunting the rural animals ??Gustafson et al., 1974). Conditioning "taste

1 II. DONE WORKS

45 aversion" occurs when neutral stimulus (eating a meal) is associated with an unconditional response (becoming
46 ill after eating). Unlike other forms of classical conditioning which require more things to form associations, this
47 kind of conditioning, for example making use of "taste aversion", in fact is generally obtained from one thing. In
48 one case the mutton was injected with a drug that caused nausea. After eating poisoned meat, jackals get away
49 from the sheep instead of attacking on them ??10]. And the made device also creates shock on the arms of the
50 patient together with its continuous inappropriate behavior and consequently, an aversion is developed in patient
51 and the device impacts on it.

52 Electro Shock Therapy (EST) device, whose size is large, and weighs heavy works using 220V. This device
53 has been connected to two electrodes by some wires and it creates shock and also an alarming sound. The
54 keys on the device have been devised in such a manner that the therapeutic doctor should stand beside the
55 patient with his/her hand on the keys. This causes reduction in concentration of the therapeutic doctor and also
56 leaves negative effects on curing the patient. Its another disadvantage is that it cannot be used everywhere and
57 continuous use of the device is not appropriate for the patient.

58 Curing process takes place through the convulsive electric shock of the device (Electroconvulsive Therapy)
59 using an electric current through the brain. In this approach, through two electrodes that are mounted on the
60 scalp, an electric current with moderate intensity is passed. This electric current which is connected in less than
61 one second, causes a wide shoot in the brain's neurons and creates a state similar to epileptic attacks. After a
62 few minutes, and returning the consciousness, the patient forgets events that have been occurred immediately
63 prior to the shock and after an hour or more, he/she experiences confusion. Continuation of the treatment for
64 three to five times a week causes the patient to feel disorientation -a state that will usually and gradually be
65 recovered after discontinuation of the treatment. Seizures cause many changes in the central and peripheral
66 nervous system. Seizures activate autonomic nervous system. In the 1940s and 1950s, ECT was used to treat
67 all mental disorders including schizophrenia but nowadays, based on extensive research, shock therapy is not
68 mainly used Mehrdad Davari Agblagh Rostamkhan ? & Elmikarbordea zobahane Ardebil ? I. Introduction a)
69 An introduction to the system owdays with the increasing population and the problems of life that create a
70 lot of anxieties and unconsciously affect people, in addition to physical illnesses, they cause some other mental
71 disorders, too. One method of behavior therapy among others is making use of mild electroconvulsive which
72 only affects the skin (not the nervous system), and works merely on the basis of classical conditioning and active
73 conditioning. Active conditioning (which is also known as operant/ instrumental /type II conditioning or trial
74 and error) is some kind of consonant or associative learning. In active conditioning, the animal learns to make
75 relationship between one of its own behaviors and some kind of reward or punishment. An interesting example
76 for making scientifically use of conditioning principles is to create "taste aversion" in jackals for the for patients
77 with severe depression -those who do not respond to antidepressant drugs and commit suicide.

78 In designing the appearance of the device, golden ration has been used. Traditionally, this ration was known as
79 adaptive division and its equivalent amount is about 1.618 (Phi number). One of the properties of this number is
80 that if a unit is subtracted from it, the remainder will be equal to its own revers. This device functions similar to
81 the electroshock (EST) device, but with more functional features; and this is more helpful and effective in curing
82 disorders such as intellectual and practical obsessions, drug addiction, deviant and inappropriate behavioral
83 habits. Compared with the previous one, the form and mechanism of this device has been changed for the
84 purpose of preventing the anxiety resulting from its appearance and the mechanism that was applied for the
85 patient by EST device, and finally in order to be effective in treatment process.

86 1 II. Done Works

87 By changing the human being's life from simple and primary mode into it complex state, mental disorders also
88 like most other illnesses, is constantly rising [9]. Nausea during chemotherapy is a natural reaction for cancer
89 patients. However, it is seen that sometimes upon entering the treatment room, these patients become nauseated.
90 It has even been seen that at the time when children with cancer is given ice cream prior to chemotherapy, they
91 also become conditional for ice cream at other times and even in case of not being treated with chemotherapy,
92 they begin to vomit after they ate their ice cream [5]. Whenever an ineffective stimulus (e.g., ringing), is given to
93 the animal together with a natural stimulus (for example: food), after sometimes the ineffective stimulus solely
94 causes reaction (for example: Salivation) in animals. This new stimulus is called conditional stimulus; because
95 it can cause behavior to be appeared if and only if there is another stimulus, then it will be called conditioned
96 stimulus; because it will be able to cause the behavior when previous to it, it is along with a natural stimulant.
97 Natural stimulant is called unconditional stimulus. Prior to being conditioned, natural stimulus or unconditional
98 stimulus (US) causes natural or unconditional response (UR). In case of an animal that has been conditional,
99 conditional or ineffective stimulus (CS) also causes conditional response (CR). Each time when CS and US are
100 presented together, it will be called a Try (T). Due to the repeated attempts, the living animal is placed in the
101 path of Acquisition (A); that is, the course during which the animal is associating the two stimuli and creating
102 a relationship between them [5]. On the basis of the time interval of providing conditional and unconditional
103 stimuli, three situations arise:

104 Simultaneous Conditioning: occurs when two stimulus are presented together and conditional stimulus remains
105 until the beginning of the response. Delayed Conditioning: offering the conditional stimulus a few seconds
106 before unconditional stimulus; and conditional stimulus remains until the beginning of the response. Trace

107 Conditioning: offering the conditional stimulus a few seconds before unconditional stimulus; and before offering
108 the unconditional stimulus, stimulus one is omitted.

109 Repeating the conditional stimulus without the unconditional one, leads to the omission of conditional response
110 and this course has been called Extinction (E). In both traces of "Learning" and "Extinction", at the beginning
111 rapid changes are occurred and gradually the rate of changes will be reduced [5]. Nausea during chemotherapy
112 for Cancer Patients is a natural response. But it is sometimes evident that upon entering the treatment room,
113 these patients become nauseated. It has even been seen that at the time when children with cancer is given ice
114 cream prior to chemotherapy, they also become conditional for ice cream at other times and even in case of not
115 being treated with chemotherapy, they begin to vomit after they ate their ice cream [5]. Sometimes, the majority
116 of research units on ECT is weak, most of them also have negative attitudes toward treatment, awareness among
117 households with higher education is better and also, families whose patients have more history of hospitalization
118 and ECT, enjoy better awareness and appropriate attitude in this regard [3]. Given the widespread use of ECT,
119 it is necessary to run the education process in these patients [7]. And in nursing cares, along with providing
120 information, patient is encouraged to express his/her thoughts and feelings about the ECT, and by listening to the
121 patient his / her negative beliefs and fears are studied. Then, they offered the information about the complications
122 of this method and the familiarity of the patient with people who already experienced this treatment and/or -if
123 the patient wishes -he/she closely observe this treatment prior to ECT [8]. Shortage and lack of knowledge, cause
124 fear and confusion; and this intensifies the cognition of the effects after electroconvulsive therapy, therefore, it is
125 necessary for nurses to provide the patients with appropriate and enough information prior to the Volume XV
126 Issue II Version I Year 2015 () implementation of this treatment method [2]. The important point is that in
127 dealing with patients who refer with physical symptoms, sufficient attention to individual and social factors will
128 be effective in incidence of these symptoms. In addition, considering the other associated psychiatric Disorders
129 and timely curing them are of great importance [1]. In behavioral therapy, one of the important causes of anxiety
130 is appearance and mechanism of the device which affects the patient. In designing the new device golden ratio
131 (Phi number) has been used; and results obtained from many scientific and psychological researches show that
132 the most beautiful surfaces and forms from the view point of humans, are those that golden ration has been
133 used in them [4]; and together with the reduction in size and weight for about 5 times, as it is evident in Fig.
134 ???, and with reverse engineering and analysis of the previous device, we have designed a new circuit which is
135 managed by remote control and is capable of being fed with battery and municipal power which is considerably
136 an important factor in reducing the patient's anxiety. These changes are also effective important factors in
137 increasing the concentration and speed in action of the doctor and leave positive impact on treatment process.
138 The device has been built in a small circuit using the pieces with perfect quality and very cheap price. Therefore,
139 the cost of the device is low and this increases the purchase possibility and using the device because of its very
140 low price. using the device is in a manner that by referring the patient to a psychiatrist for treatment after the
141 doctor diagnosed the disease type, for example nervous twitch(sideway jump of eye) in which the patient cannot
142 control the nervous twitch, this device is connected to the wrist of the person and is lighted. This device includes
143 three means for treatment such as light shock, alarming voice and alarming lights. During the conversation, and
144 upon the recognition that the patient suffers from nervous twitch, psychiatrist pushes the key No. 1 and the red
145 alarming light of the device is turned on. If the patient continues twitching the control key No. 2 is connected and
146 creates an alarming voice to prevent the patient from twitching. After many alarming times, if the patient again
147 continues the twitching, based on the doctor's recognition another light shock which is similar to a painful bite
148 is exerted to the patient's skin; using the key No.4, the shock is increased for the purpose that associating this
149 status (prevention) with what is considered as inappropriate or abnormal behavior (as the conditional stimulus)
150 causes the transmission of feeling prevention and disgust to the conditioned stimulus, and in this way it creates
151 its therapeutic effects. Therefore, avoidance conditioning, aversive therapy, and thought stopping are the most
152 principal methods that this device uses them. The above said techniques are considered as effective means in
153 treatment of disorders such as practical and intellectual obsessions, being addicted to narcotics, digressive and
154 behavioral inappropriate habits and ? .Also, a child who learns that assault and violence towards any of his/her
155 brothers or sisters will follow to be punished by parents, will prevent such violence. Operant conditioning will
156 also be activated in such cases. Of course, active conditioning through punishment has also some disadvantages;
157 for example, the individual doesn't learn what to do and results that he/she obtains are not predictable in the
158 same size as offering the reward. Another disadvantage is that it can be led to feeling hate about the person
159 who acts to punish, or about the situation in which the punishment has taken place, and this leads to more
160 destructive effects [6]. Since children are weak-minded than other people, the device has been designed in such
161 a manner that in the first stage, the physician warns the child only through one slight shock, but in the next
162 times since prior to each shock The designed device functions similar to the electroshock (EST) device, but with
163 more functional features; and this is more helpful and effective in disorders such as intellectual and practical
164 obsessions, drug addiction, deviant and inappropriate behavioral habits. One of the usages of the new device is
165 therapy with warning lights that can be an appropriate alternative for shock.

166 2 III. The Introduction of the Proposed System

167 one red light is turned on, physician can warn the child through only one red light or warning voice for the
168 purpose of preventing the child from tickling and that no negative impact to be exerted to the child. One of the

3 IV. CONCLUSION

169 main difficulties in Shock Therapy is low awareness of the patients and fear and anxiety of the device. Upon
170 increase in awareness, complete description and solving the problems the treatment can be more effective.

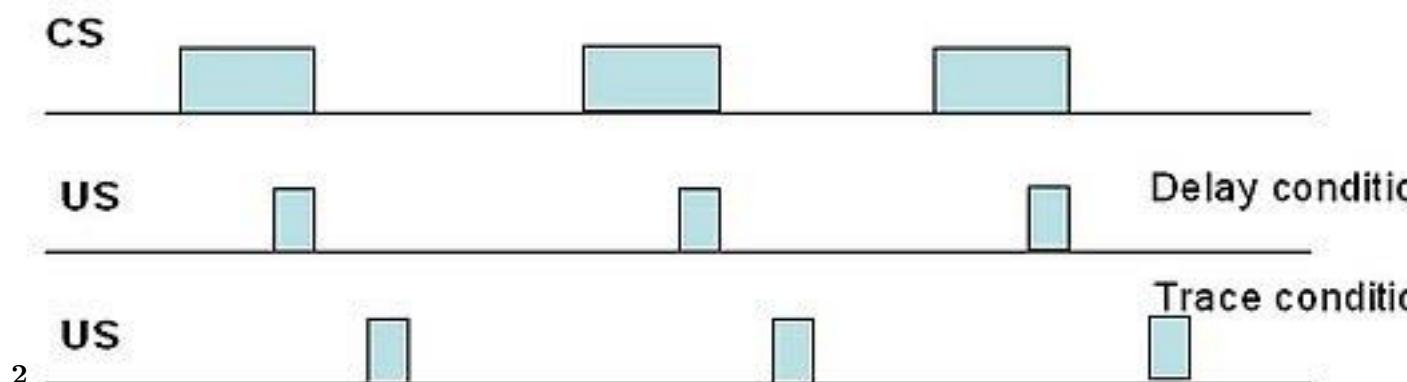
171 3 IV. Conclusion

172 In this research we studied the slight Electroshock EST device concerning the treatment manner, mechanism
173 and the anxiety which is inserted into the patient, and came to the conclusion that creation of anxiety in patient
174 depends on the awareness of the patient as well as the appearance and the mechanism used in the device.
175 Also, mechanism and management of the device is one of the effective factors that impact on the performance
176 of the doctor and leave negative effect on the process of treatment progress in patient. Consequently, in this
177 research beside the omission of the difficulties of the previous device, a new and different device with declaration
178 No. 139350140002002142 has been invented that has many characteristics; and through studying the previous
179 researches and also reverse engineering of the obtained informative device helps the researcher in compiling the
180 process of providing the new device. Unfortunately, in Iran we couldn't have an access to more papers that
181 fully describe the electroconvulsive shock therapy method using the electroconvulsive therapy in conditioning
treatment. For this reason, the researcher of this paper proposes that more researches to be done in this regard.



Figure 1: Figure 1 :

182 1 2 3 4



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