

# Perception And Facts Regarding Electroconvulsive Therapy At Benazir Bhutto Hospital, Rawalpindi

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## Abstract

**Objective:** This study delves into the effectiveness of Electroconvulsive Therapy (ECT) as a treatment for psychiatric disorders, focusing on its administration protocols, patient demographics, and therapeutic outcomes.

**Methods:** The research, conducted at Benazir Bhutto Hospital, Rawalpindi, from 2013 to 2018, analysed data from 1779 patients, revealing a substantial prevalence of bipolar affective disorder, severe depressive illness, postpartum psychosis, and catatonic schizophrenia among those undergoing ECT.

**Results:** The study underscores the rapid therapeutic response observed within 1 to 5 ECT sessions, emphasizing the expeditious nature of ECT. The absence of serious side effects reported during the study period supports the safety profile of ECT when administered under appropriate protocols.

**Conclusion:** Electroconvulsive Therapy (ECT) is a viable and effective treatment modality for various psychiatric disorders. This research contributes valuable insights into the utilization and outcomes of ECT, it acknowledges the need for future investigations to explore patient experiences, long-term follow-ups, and potential side effects.

**Keywords:** electroconvulsive therapy, psychiatric illness.

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## 1. Introduction

Electroconvulsive Therapy (ECT) is a treatment method based on the induction of a generalized convulsion in patients after stimulation of the brain tissue with an electric current. ECT is widely used in United States as endorsed by American Psychiatric Association and has been demonstrated to be an effective treatment for certain psychiatric disorders.<sup>1</sup> ECT is demonstrated to have a property of mood stabilization that is considered superior to pharmacotherapy in the management of several psychiatric disorders such as depressive episode, manic episode as well as mixed episode in bipolar affective disorder.<sup>2,3</sup> Administration of ECT provides a quick therapeutic response as compared to psychotropic medications. Neuroplastic changes are visible even after a single electroconvulsive stimulation.<sup>4</sup> About each neurotransmitter system is influenced by ECT comprising serotonin, dopamine, acetyl-choline, endogenous opioids, epinephrine and

nor-epinephrine.<sup>5</sup> This study explores Electroconvulsive Therapy (ECT) as a treatment for psychiatric disorders, emphasizing efficacy, administration protocols, and patient demographics. Results feature disorder prevalence and ECT response, suggesting therapeutic effectiveness.

### Administration of ECT

Appropriate equipment to monitor vital signs of the patient and to provide initial medical emergency cover are available at the areas of ECT treatment and recovery. Any optimal site of treatment has separate facilities of waiting area to have ECT done, treatment area where ECT is conducted and recovery area where post-treatment monitoring is done.<sup>6</sup> Some important equipment includes stethoscope, sphygmomanometer, pulse oximetry, electrocardiographic device and system of oxygen delivery in the vicinity of treatment area where ECT is delivered.<sup>7</sup> None of the patients is treated with ECT without his or her written informed consent that includes the understanding of patient

about the process and effectiveness of ECT as well as his or her commitment on compliance. Besides the informed consent, vital stability and fundoscopy of the patient are some of the prerequisites to be ensured before the administration of ECT.<sup>6</sup> Previous research indicates that a combination of ECT and the maintenance medication is highly effective as compared to medication alone.<sup>8,9</sup>

### Mechanism of ECT

Electroconvulsive Therapy has been considered as an effective treatment for certain psychiatric disorders as evidenced by extensive research.<sup>10,11</sup> Ladislas Meduna is recognized as the inventor of ECT. During the course of ECT, certain changes in chemical composition of the brain takes place that helps in treatment of certain psychiatric disorders.<sup>12,13</sup> Many theories regarding the mechanism of ECT has been devised over 75 years of research on ECT.<sup>14</sup> In a study of 1979, these theories about mechanism of action in ECT were categorized into structural, psychological, electrophysiological and biochemical.<sup>15</sup> Recent concept about mechanism of ECT include advanced technologies to investigate morphological changes at cellular level termed as 'neuroplasticity' for animal studies and 'neural connectivity' for human studies.<sup>16</sup>

## 2. Materials & Methods

The study was conducted to analyze total number of patients undergone ECT sessions for different psychiatric disorders from 2013 to 2018 at Benazir Bhutto Hospital, Rawalpindi and it was also done to assess the total number of ECT sessions required for the treatment of different psychiatric disorders.

In the current study, hospital records of patients (N= 1779) belonging to Benazir Bhutto Hospital Rawalpindi including adult males (n= 655) and females (n= 1124) having undergone Electroconvulsive therapy between 2013 and 2018 were examined retrospectively. Clinical data of the patients used in this study were gender, diagnosis for which ECT was recommended, seizure duration in a single ECT session and number of ECT sessions applied to each patient respectively. Chi-square test was applied to determine relation between the

number of ECTs and improvement. P-value was <0.05 was considered significant.

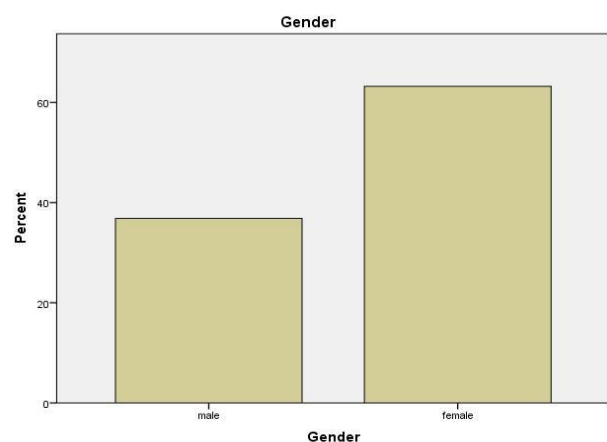
The patients of catatonic schizophrenia and postpartum psychosis were treated with ECT because it is the treatment of choice for these disorders. Moreover, ECT was administered on the patients because of several indications including their marked behavioral disturbances, or there was a possibility of self-harm or harm to others or had previous such episodes unresponsive to the medication, severity of illness, the families had paucity of resources and wanted to get quick relief and they were having lack of social support and poor compliance to medication.

## 3. Results

**Table 1: Demographic characteristics of the sample (N= 1779)**

Characteristic	Frequency	Percentage (%)
<b>Gender</b>	655	36.8
<b>Males</b>	1124	63.2
<b>Females</b>		

The table above indicates the distribution of sample according to gender. The data shows that there were about 36.8% male patients who were treated with ECT whereas about 63.2% female patients who were treated with ECT during 2013 to 2018 in Benazir Bhutto Hospital Rawalpindi.



**Figure 1:**

**Table 2: Frequency of Psychiatric disorders in patients undergoing Electroconvulsive Therapy (N= 1779)**

Diagnosis	Frequency	Percentage (%)
<b>Bipolar affective disorder</b>	1171	65.8
<b>Severe depressive illness</b>	345	19.4
<b>Postpartum psychosis</b>	97	5.5
<b>Catatonic schizophrenia</b>	166	9.3

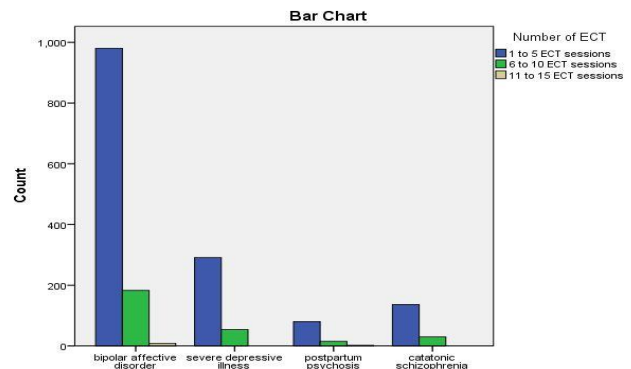
Table 2 describes the frequency of Psychiatric disorders in patients undergone ECT from 2013 to 2018 in Benazir Bhutto Hospital, Rawalpindi. The data indicates that about 65.8% of the patients were diagnosed with bipolar affective disorder, about 19.4% of the patients were diagnosed with severe depressive illness, approximately 5.5% of the patients were diagnosed with postpartum psychosis whereas about 9.3% of the patients were diagnosed with catatonic schizophrenia. Thus, the data shows that bipolar affective disorder was the most prevalent psychiatric disorder between 2013 to 2018 in Benazir Bhutto Hospital, Rawalpindi that was treated with ECT.

**Table 3: Number of ECT sessions required across several Psychiatric disorders (N=1779)**

Diagnosis	Total patients with diagnosis	1-5 sessions	6-10 sessions	11-15 sessions
<b>Bipolar affective disorder</b>	1171	980 (83.7%)	183 (15.7%)	8 (0.6%)
<b>Severe depressive illness</b>	345	291 (84.4%)	54 (15.6%)	0
<b>Postpartum psychosis</b>	97	80 (82.5%)	15 (15.5%)	2 (2.0%)
<b>Catatonic schizophrenia</b>	166	136 (82.0%)	30 (18.0%)	0

Table 3 explains the number of ECT sessions required across several Psychiatric disorders in patients undergoing ECT between 2013 to 2018 in Benazir Bhutto Hospital, Rawalpindi. Chi-square test was applied to determine relation between the number of ECTs and improvement. P-value was <0.05, it was significant. The data indicates that almost 1 to 5 ECT sessions were used to treat most of the cases of bipolar affective disorder 83.7% (n= 980/1171), severe depressive illness 84.4% (n= 291/345) and postpartum psychosis 82.5% (n= 80/97). Similarly, about 1 to 5

sessions of ECT were found to be therapeutically significant for response in most of the cases of catatonic schizophrenia 82% (n= 136/166). Interestingly, patients needing more than ten ECTs in any one of the disorders mentioned above was almost negligible whereas, very less patients in either of the disorders need ECTs between 6-10.



**Figure 3: Diagnosis of Psychiatric Disorder**

#### 4. Discussion

This study's emphasis on the prevailing use of ECT for bipolar affective disorder, severe depressive illness, postpartum psychosis, and catatonic schizophrenia aligns with established literature supporting the efficacy of ECT across diverse psychiatric conditions.<sup>17-20</sup>

The observed therapeutic response within 1 to 5 ECT sessions for the majority of cases underscores the expeditious and efficient nature of ECT, providing a valuable alternative for patients with acute psychiatric symptoms. This finding aligns with the existing literature that highlights the rapid onset of action associated with ECT, making it particularly advantageous in cases where hasty intervention is crucial, such as severe depressive episodes.<sup>21,22</sup>

The absence of serious side effects reported during the study period adds weight to the safety profile of ECT, aligning with the broader literature emphasizing its safety when administered under appropriate protocols.<sup>6,7</sup> However, the discussion acknowledges the limitation of the study in not providing a comprehensive exploration of patient experiences and potential long-term effects. Future research endeavours could further

contribute to the understanding of the patient perspective and the sustained effects of ECT.

It also recognizes the integration of ECT with maintenance medication as a promising approach, echoing previous research suggesting the synergy of these modalities in achieving optimal therapeutic outcomes. This underscores the importance of a comprehensive treatment approach that combines biological interventions like ECT with ongoing pharmacological support as supported by literature.<sup>8,9</sup> While the study makes a valuable contribution to the existing body of knowledge on ECT, the discussion encourages future investigations to explore potential factors influencing treatment outcomes, such as variations in ECT protocols, patient-specific characteristics, and socio-cultural considerations. By addressing these aspects, future research can refine our understanding of the nuanced dynamics associated with ECT, informing more targeted and personalized approaches to psychiatric treatment.

## 5. Conclusion

In conclusion, this research underscores the significance of Electroconvulsive Therapy (ECT) as a viable and effective treatment modality for various psychiatric disorders. The findings support previous research indicating the therapeutic efficacy of ECT, particularly when integrated with maintenance medication.

While the study contributes valuable data on the utilization and outcomes of ECT, future research could benefit from exploring patient experiences, long-term follow-ups, and a more comprehensive investigation into potential side effects. Overall, this investigation reinforces ECT's role as a valuable therapeutic option, offering rapid and efficacious treatment for a spectrum of psychiatric disorders.

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**Potential competing interests:** None to report.

### Contributions:

M.A.R, F.A.M - Conception of study

M.A.R, F.A.M, B.N - Experimentation/Study Conduction

F.A.M, S.T, S.R.H.Z -

Analysis/Interpretation/Discussion

M.A.R, S.T, S.R.H.Z, M.A - Manuscript Writing

M.A.R, F.A.M, S.T, B.N, M.A - Critical Review

M.A.R, F.A.M - Facilitation and Material analysis

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