

**The Influence Of Electroconvulsive Therapy On The Reconsolidation Of Autobiographical  
Memories: A Research Critique**

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This study looked at the effects of electroconvulsive therapy (ECT) on a participant's ability to reconsolidate autobiographical memories, specifically participants with depression. It was looking to see if patients with depression would have a harder time or an easier time recalling certain life memories, depending on when they received ECT.

I was interested in this research study because of the negative history revolving around electroconvulsive therapy. I personally always thought that electroconvulsive therapy had the effect of harming people's memories and in the future would no longer be able to retain them. Media portrayals convinced me when I was a child that it was a dangerous process used only on individuals suffering from intense mental illness. An example of this media is the TV show *American Horror Story: Asylum*, Episode 2: *Tricks and Treats*. In that episode, the main character Lana was given ECT as a form of punishment for being gay. However, after reading this article and others, I've come to see ECT as a very effective tool for patients suffering from debilitating disorders.

Patients were acquired via a convenience sample. All patients had been treated for unipolar or bipolar disorder at the University of Medicine in Berlin, Germany. This kind of method could cause generalization because it was conducted on a particular population of people in Berlin, Germany: patients experiencing depression. The results may be different if the research was more spread out location-wise or included patients who experienced other mental illnesses. This study was adequately representative of their target population. It used participants who were clinically diagnosed with depression; the total average score on the MADRS test was 30.38, which indicates moderate depression. However, there is no control group that involves patients

with zero depression. A more effective study would have included a third group of participants with no depression. The sample was 38 participants, which is a decent number, however, a retest would be most beneficial with a larger sample size, especially because the sample was split into two equal groups. Since the patients were also being treated for bipolar or unipolar disorder, there could be some bias depending on the quality of past care.

The intervention was the electroconvulsive therapy given to patients in two groups. The groups would take an Autobiographical Memory Interview (AMI) a specific number of hours or days before ECT, 24 hours for one group and 2-20 days for the other group, then would retake the AMI after the session. The AMI is an interview that tests episodic and semantic autobiographical memories by being split into four different parts. The first part tests episodic autobiographical memories, the second part tests semantic knowledge that is personal to the participant, the third part tests episodic and semantic childhood memories, and part four tests general knowledge. There are 71 different items in the AMI.

Group A was given ECT 24 hours after the AMI and Group B 2-20 days after the AMI. The intervention was matched perfectly with the question, which was “How does electroconvulsive therapy affect the recalling of autobiographical memories in patients with depression?”. The intervention may not be as representative because the study was done on a particular population of patients in Berlin, Germany. Depression in Berlin could differ from other countries where the average rates of depression may be lower or higher. In this study there were two groups, A and B, however, neither of them was a control group. The method could’ve provided a real control despite not having an actual control group. The control group could have either been patients without depression or patients not experiencing ECT. The research team measured variables that answered the question and were reliable as well as valid.

The results section suggests that ECT when given at the right time, may affect the reconsolidation of memories. After analyzing the data, the results from Group A and Group B were strong. There was a p-score of 0.043 when comparing Groups A and B, which demonstrates statistical significance. The differences in the results indicate that depending on when a memory is recalled, and then if ECT is performed, it can affect the ability to recall that memory. Rather than ECT always causing memory impairment, it shows that it only occurs with specific memories at specific times. One piece of information that was left was when the team had retested the participant's memory with the AMI after ECT. The paper only stated that the AMI was given to the participants once more after the therapy, however, a specific time range was not presented. Despite that one piece of information missing, this paper presented the research, the limitations, and what was lacking, very clearly.

The discussion section was faithful to the results and accurately portrayed them. The team did not leave anything out, including limitations, and made sure to use citations for any claims or data. They went into detail about what the biggest limitations were and how they could have affected the results or how they could be solved. One limitation that was brought up was the need for more data on neural activity and changes within the hippocampus. By having data on the brain's activity during ECT and memory recall, the true effects of ECT could be seen within hippocampal activation before and after the session. A limitation that was not mentioned was not using a control group that did not have depression. It could be beneficial to have a control group that did not have depression, to make sure that it was depression impacting the abilities of memory retrieval, and not any other factors. Without a control group, it's harder to know that

ECT was causing the memory impairment, instead of the time differences being the actual cause. The discussion section goes into detail on how their research can be related to other studies, which demonstrates a framing of the author's research.

Overall, this paper demonstrated data that answered the original question accurately. The answer to this study was that ECT can cause a significant difference in the ability to recall autobiographical memories depending on when they are recalled before the therapy, which was a compelling answer. A larger sample, with more diverse participants and neural data, may establish more solid evidence of ETC's effects, that can be applied to not just a single group of people. With a larger sample, as well as a control group, future results would be taken as much more secure and effective.