Psychiatric electroceutical interventions and their potential to influence personality: A cross-analysis of survey and interview results

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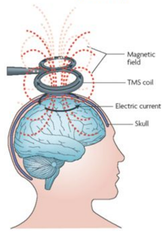
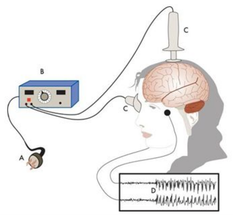
Introduction

Neurotechnologies have the potential to alter a patient's personality or sense of self. Most concerns about this in the neuroethics literature are almost entirely focused on Deep Brain Stimulation (DBS); little discussion has occurred about other psychiatric electroceuticals interventions (PEIs) such as electroconvulsive therapy (ECT), transcranial magnetic stimulation (TMS), and adaptive brain implants (ABI). In addition, little is known about how these concerns differ across stakeholder groups.

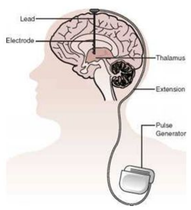
Transcranial magnetic stimulation (TMS)



Electroconvulsive therapy (ECT)



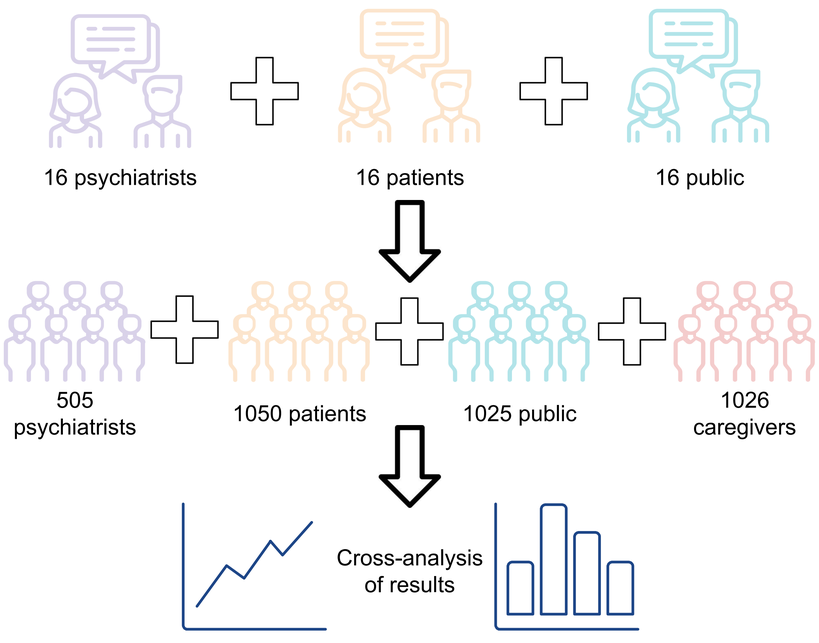
Deep brain stimulation (DBS) & Automatic brain implant (ABI)



Research Aims

Our study aims to improve our understanding of how psychiatrists, patients with depression, and the general public perceive the effects of PEIs on personality or sense of self.

Methods

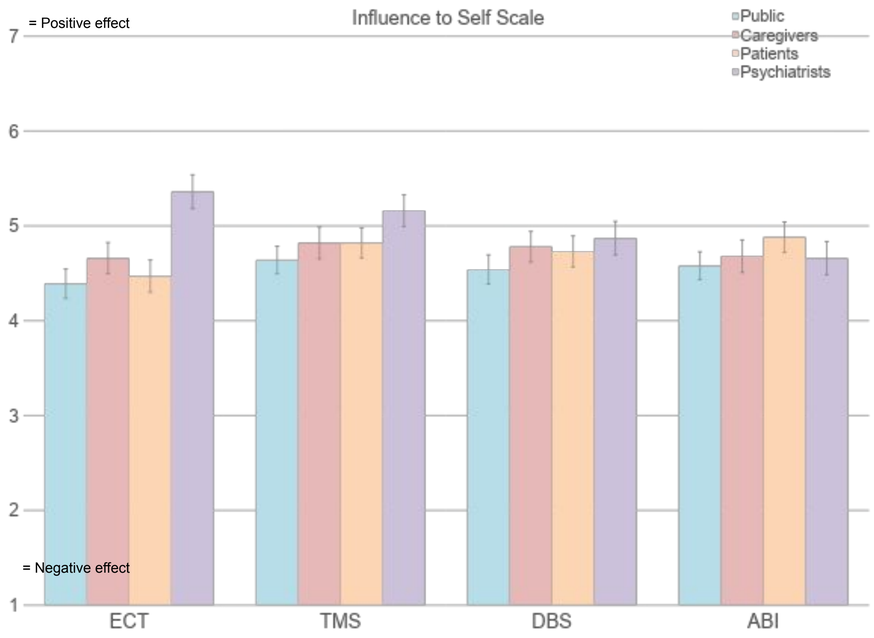


Results

"[W]hen people are depressed, their personality is changed. They have low self-esteem, they feel like they are like incompetent and it produces a transformation. If it works...people have more energy, they are more creative, more imaginative...their cognitive function is improved" Psychiatrist 6

"I think affecting "sense of self" is like kind of connected to self-esteem, where therapy could have positive impacts from that and… if you're treating depression, that could also be an improved sense of self-esteem. But in terms of core personality features, I don't think either are going to be as strongly connected to that." Psychiatrist 15

"When you're feeling less depressed, you're going to be in a better mood and perhaps that would be reflective of your personality, too, over time that people see you as an outgoing, friendly person." Patient 3



"There will hopefully be results where the depression is weakening, so that will cause you to be different. And then if the treatment didn't work...a little bit irritable and upset. So that would cause a change in your personality or mood." Public 14

"I think that the stimulation would just...get the body to work normally again...and to produce those things that those that are depressed might be lacking." Public 15

"Any time that you're changing the brain chemistry through something like that...affecting the brain waves, you have a sense of changing the person's personality." Patient 13

Figure 1. Perceived influence on self across stakeholder groups (public, caregivers, patients, psychiatrists) by modality (ECT, TMS, DBS, ABI)

Discussion

- Interviews
  - Important factors of the technology to consider when determining effect on self/personality:
  - Success or failure of the treatment and the side effects
- Surveys
  - Compared to subjects assigned to ECT, participants assigned to TMS perceived it to have greater influence on sense of self
  - Compared to members of the public, psychiatrists, patients and caregivers, perceived a stronger influence on self.
  - Overall, the conclusion that PEIs might affect the self was both weak and positive, which is in contrast with the emphasis in the neuroethics literature on extreme and negative cases
- Compared to the public, other stakeholder groups see the potential benefits in treating the condition as positive changes to self, which was consistent with the interview findings.

Future Steps

- Items from survey
  - See which items are driving the personality answers, or if they are consistent across stakeholders and technologies
- Analytic map
  - Will incorporate insights from literature review, interview results, and survey results
  - More than personality results; will look at other ethical issues
  - Hope to identify shared concerns, interrelations, and differences across interventions and stakeholder groups
- The Neuroethics literature should attend to a broader range of possible effects on self

Acknowledgements

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