

Approaches to Inducing Obsessional Stress in Obsessive-Compulsive Disorder (OCD): An Empirical Study with Patients Undergoing Transcranial Magnetic Stimulation (TMS) Therapy

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Abstract : Obsessive-compulsive disorder (OCD), a long-lasting anxiety disorder involving recurrent, intrusive thoughts, affects over 2 million adults in the United States. Transcranial magnetic stimulation (TMS) stands out as a noninvasive, cutting-edge therapy that has been shown to reduce symptoms in patients with treatment-resistant OCD. The Food and Drug Administration (FDA) approved protocol pairs TMS sessions with individualized symptom provocation, aiming to improve the susceptibility of brain circuits to stimulation. However, limited standardization or guidance exists on how to conduct symptom provocation and which methods are most effective. This study aims to compare the effect of internal versus external techniques to induce obsessional stress in a clinical setting during TMS therapy. Two symptom provocation methods, (i) Asking patients thought-provoking questions about their obsessions (internal) and (ii) Requesting patients to perform obsession-related tasks (external), were employed in a crossover design with repeated measurement. Thirty-six treatments of NeuroStar TMS were administered to each of two patients over 8 weeks in an outpatient clinic. Patient One received 18 sessions of internal provocation followed by 18 sessions of external provocation, while Patient Two received 18 sessions of external provocation followed by 18 sessions of internal provocation. The primary outcome was the level of self-reported obsessional stress on a visual analog scale from 1 to 10. The secondary outcome was self-reported OCD severity, collected biweekly in a four-level Likert-scale (1 to 4) of bad, fair, good and excellent. Outcomes were compared and tested between provocation arms through repeated measures ANOVA, accounting for intra-patient correlations. Ages were 42 for Patient One (male, White) and 57 for Patient Two (male, White). Both patients had similar moderate symptoms at baseline, as determined through the Yale-Brown Obsessive Compulsive Scale (YBOCS). When comparing obsessional stress induced across the two arms of internal and external provocation methods, the mean (SD) was 6.03 (1.18) for internal and 4.01 (1.28) for external strategies ($P=0.0019$); ranges were 3 to 8 for internal and 2 to 8 for external strategies. Internal provocation yielded 5 (31.25%) bad, 6 (33.33%) fair, 3 (18.75%) good, and 2 (12.5%) excellent responses for OCD status, while external provocation yielded 5 (31.25%) bad, 9 (56.25%) fair, 1 (6.25%) good, and 1 (6.25%) excellent responses ($P=0.58$). Internal symptom provocation tactics had a significantly stronger impact on inducing obsessional stress and led to better OCD status (non-significant). This could be attributed to the fact that answering questions may prompt patients to reflect more on their lived experiences and struggles with OCD. In the future, clinical trials with larger sample sizes are warranted to validate this finding. Results support the increased integration of internal methods into structured provocation protocols, potentially reducing the time required for provocation and achieving greater treatment response to TMS.

Keywords : obsessive-compulsive disorder, transcranial magnetic stimulation, mental health, symptom provocation

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