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Memory and meta-memory in patients with obsessive-compulsive disorder: A comparative study

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Abstract

Obsessive-Compulsive Disorder (OCD) is a chronic mental health condition marked by intrusive thoughts (obsessions) and repetitive behaviors (compulsions). This study investigates the memory and meta-memory functioning in OCD patients compared to a matched control group. A total of 60 participants (30 OCD patients and 30 controls) were assessed using the Wechsler Memory Scale (WMS) and the Memory Functioning Questionnaire (MFQ). The results indicate no significant differences in core memory functions but reveal substantial deficits in meta-memory among OCD patients, including diminished confidence in memory, increased forgetfulness, and heightened anxiety about memory lapses. These findings highlight the cognitive distortions in OCD, particularly the interplay between memory distrust and compulsive checking behaviors, providing avenues for targeted therapeutic interventions.

Keywords: Obsessive-Compulsive Disorder; Memory; Meta-Memory; Cognitive Distortions; Compulsive Behaviors

1. Introduction

Obsessive-Compulsive Disorder (OCD) is a debilitating psychiatric condition characterized by persistent obsessions and compulsions, affecting approximately 1.5-3% of the global population. As per the World Health Organization, OCD ranks among the top 20 causes of disability worldwide. Obsessions in OCD often include intrusive, distressing thoughts, while compulsions involve repetitive actions aimed at alleviating the anxiety triggered by these thoughts. Common compulsions such as excessive checking and cleaning are often linked to an underlying distrust in memory, suggesting a significant cognitive component to the disorder.

Memory dysfunction in OCD has been a topic of considerable research, with findings often indicating a specific deficit in meta-memory rather than in primary memory processes. Meta-memory refers to an individual's awareness and regulation of their memory processes. This study aims to expand on existing research by assessing both memory and meta-memory functioning in OCD patients, using standardized tools to provide insights into the cognitive mechanisms underlying the disorder.

2. Methods

2.1. Study Design A cross-sectional design was employed

Participants A total of 60 participants, including 30 OCD patients and 30 age matched controls, were recruited using purposive sampling. OCD patients were diagnosed as per ICD-11 criteria and recruited from the Mental Health Institute, SCB Medical College, Cuttack. Controls were screened for psychiatric conditions using the General Health Questionnaire (GHQ-12).

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2.2. Inclusion Criteria

- Age: 18-50 years
- For OCD group: Diagnosis of OCD (duration ≥6 months)
- For controls: No psychiatric or neurological conditions

2.3. Exclusion Criteria

- Comorbid psychiatric or neurological disorders
- History of traumatic brain injury

2.4 Measures

- Wechsler Memory Scale (WMS): Assessed auditory, visual, immediate, and delayed memory indices.
- Memory Functioning Questionnaire (MFQ): Evaluated perceptions of everyday memory, including frequency of forgetting, seriousness of lapses, and mnemonic strategies.
- Yale-Brown Obsessive-Compulsive Scale (Y-BOCS): Measured OCD symptom severity.

Procedure Ethical approval was obtained before data collection. Participants completed sociodemographic and clinical questionnaires, followed by the administration of WMS, MFQ, and Y-BOCS for OCD patients and WMS and MFQ for controls. Data was analyzed using SPSS v20.0, employing Mann-Whitney U test to compare groups.

3. Results

Sociodemographic Characteristics The OCD group comprised predominantly females (83.3%), with a mean age of 29.5 years. Most participants belonged to a middle socioeconomic status (76.7%). Controls showed a balanced gender distribution and similar age profiles.

Clinical Characteristics Among OCD patients, contamination obsessions (70%) and cleaning/washing compulsions (66.6%) were predominant. The mean Y-BOCS score indicated moderate symptom severity.

Memory Functioning There were no significant differences in auditory, visual, immediate, or delayed memory indices between the OCD and control groups ($p > 0.05$). This finding suggests that primary memory processes remain intact in OCD patients.

Meta-memory Functioning Significant deficits in meta-memory were observed among OCD patients:

- Lower confidence in memory abilities ($p < 0.01$)
- Higher reported frequency of forgetting ($p < 0.01$)
- Greater perceived seriousness of memory lapses ($p < 0.01$)

These results underscore the role of meta-cognitive distortions, particularly in the context of compulsive checking behaviors.

4. Discussion

The study corroborates prior findings that OCD patients exhibit intact core memory functions but impaired meta-memory. The heightened memory distrust observed aligns with cognitive theories suggesting that OCD involves exaggerated responsibility and a need for certainty, driving compulsive behaviors.

Anxiety, which is a hallmark of OCD, can significantly influence cognitive processes, including memory. Anxiety can enhance attentional focus on perceived threats, leading to better encoding of threat-related details into memory. However, this hypervigilance also contributes to cognitive biases, such as the overestimation of danger and responsibility, which can distort the individual's interpretation of their memories without necessarily affecting the accuracy of the memory itself (Eysenck et al., 2007).

Individuals with OCD often show heightened attention to details during tasks, which can lead to enhanced memory encoding for those details. However, due to the cognitive biases inherent in OCD, such as inflated responsibility and fear of negative outcomes, these individuals may still experience significant doubt about their memory accuracy, leading to

compulsive behaviors like checking, even when their memory traces are intact (van den Hout & Kindt, 2003). Anxiety and related cognitive biases in OCD patients could lead to a heightened focus on potential errors or threats, which enhances the encoding of such information. However, these same biases cause patients to doubt the correctness of their memories, not because their memories are inaccurate, but because their perception of the memory is distorted by their anxiety and cognitive biases

4.1. Limitations

- Small sample size limits generalizability.
- Cross-sectional design precludes causal inferences.
- Reliance on self-reported measures introduces potential biases.

Future Directions Longitudinal studies with larger samples are warranted to explore causal relationships between memory distrust and compulsive behaviors. Neuroimaging studies could further elucidate the neural correlates of meta-memory deficits in OCD.

5. Conclusion

OCD patients demonstrate significant impairments in meta-memory, particularly in confidence and perceived reliability of memory, despite intact primary memory functions. This lack of confidence in one's cognitive processes what is termed as "meta-memory" is a core feature of OCD. While individuals with OCD often perform normally on standard memory tests (as noted in the memory domain findings), their subjective experience is one of profound uncertainty. This disparity between objective memory performance and subjective cognitive confidence explains why OCD behaviors persist despite evidence that memory functions may be largely intact. The compulsive behaviors, therefore, are not about addressing actual memory lapses but about managing the intolerable feeling of doubt and the need for certainty.

Thus, understanding OCD as a disorder of doubt highlights the importance of focusing not just on the cognitive deficits but also on the subjective experience of memory distrust and cognitive uncertainty. This perspective is crucial for developing effective interventions that target not only the behaviors but also the underlying cognitive distortions that fuel the disorder.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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