

Neurocognitive Mechanisms in Compulsive Hoarding: Addressing Intervention Barriers

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Abstract. Compulsive hoarding disorder presents a significant challenge in psychological and behavioral interventions. This study investigates the neurocognitive mechanisms underlying hoarding behaviors, focusing on the neural correlates associated with decision-making deficits. We employed functional neuroimaging to compare brain activity in individuals with hoarding disorder against a control group. Our findings reveal distinct patterns of neural activation, particularly in the anterior cingulate cortex and insula, suggesting these regions play crucial roles in poor decision-making processes. These insights offer new directions for targeted therapeutic strategies, emphasizing the need for personalized intervention protocols tailored to neurocognitive profiles.

Keywords: Compulsive Hoarding Disorder, Neurocognitive Mechanisms, fMRI, Decision-Making Deficits, Anterior Cingulate Cortex, Insula, Psychological Interventions, Behavioral Neuroscience, Therapeutic Strategies

Introduction

Compulsive hoarding disorder (CHD) is a debilitating condition characterized by persistent difficulty discarding possessions, leading to cluttered living spaces and significant distress. Affecting approximately 2-6% of the population, CHD is frequently comorbid with anxiety and depression, exacerbating its impact on individuals' daily functioning. Recent years have

seen an increased interest in understanding the underlying cognitive and neural mechanisms that contribute to hoarding behaviors, as traditional therapeutic approaches often yield limited success. Neuroimaging studies suggest aberrant brain activity in regions associated with executive function and emotional regulation, such as the anterior cingulate cortex (ACC) and insular cortex. These abnormalities may underlie the impaired decision-making processes observed in individuals with CHD, highlighting the importance of developing interventions that address these specific neural vulnerabilities. This paper delves into the neurocognitive aspects of CHD, utilizing functional MRI to explore the differences in brain activation between hoarders and non-hoarders during decision-making tasks. Our research aims to elucidate the contribution of neural dysfunction to the challenges faced in treating CHD, proposing novel intervention frameworks that cater to the unique neurocognitive profiles of affected individuals. The structure of this paper is as follows: Section 1 reviews existing literature on CHD and its neural underpinnings. Section 2 details the methodology and participant selection for our study. Section 3 presents our findings on neural correlates of decision-making deficits in CHD. Finally, Section 4 discusses the implications of our findings and proposes targeted therapeutic strategies.

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