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Memory and the Mediating Role of Task Difficulty in Patients with Schizophrenia

Objective: Using meta-analytic methods, we sought to synthesize the research literature on memory impairment in schizophrenia. Additionally, we compared performances across memory measures to determine if task difficulty (e.g., effortful encoding and retrieval versus non-effortful encoding and retrieval) could account for variance across studies. Method: Our primary measures of interest included the California Verbal Learning Test, Wechsler Memory Scale, Rey Auditory Verbal Learning Test, Hopkins Verbal Learning Test, Rey Osterrieth Complex Figure Test, and the Benton Visual Retention Test. We searched for all studies that met inclusion criteria using Pubmed, PsycInfo, Scholars Portal Search, and Google Scholar. Studies were included if 1) they were published after 1980; 2) healthy controls were compared to patients with schizophrenia; 3) at least one of the noted measures of interest were employed in the primary study; and 4) the primary study included data that could be transformed to point estimate effect sizes (i.e., Cohen’s d). Results: Cohen’s d was calculated between patients and healthy controls, along with overall 95% confidence intervals. A two-tailed independent samples t-test was conducted to assess if performance differed on various paired subtests of the same domain. Large effect sizes were found for all memory tests. No significant differences were found between subtests. Conclusion: Patients with schizophrenia experience significant verbal and visual memory impairments, which is not explained by task difficulty. Patients were found unable to learn or retrieve more reliably despite repetition and cuing strategies, suggesting that memory impairment in the illness is not a function of task difficulty.