

A Meta-Analysis of the Efficacy of Cognitive Remediation in Mood Disorders

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Abstract

Cognitive remediation training has been used for patients with schizophrenia in order to improve cognitive deficits. Cognitive impairments have not only been found to be a common characteristic of patients with schizophrenia but are also prevalent in patients with mood disorders such as depression and bipolar I & II disorder. Extending findings from past research, the current study seeks to examine the efficacy of cognitive remediation training in patients with depression and bipolar disorders. By running a meta-analysis, our research team will systematically examine the efficacy of cognitive remediation training in enhancing cognitive abilities and mitigating secondary outcomes such as negative mood symptoms.

Introduction

While there is a lot of literature and research done on treatments for the positive and even negative symptoms for active mental disorders, there is an unfortunate hole in research for the rehabilitation of those who have suffered from severe psychological disorders such as depression and schizophrenia. Recently there has been an increase in interest in this field of study which has resulted in a lot of new techniques to try to address these deficits with the main goal being to improve attention, alertness, working memory, response inhibition, and planning. One of the most promising of these techniques is known as cognitive remediation therapy (CRT) which is defined by experts as "a behavioral-training based intervention that aims to improve cognitive processes (attention, memory, executive function, social cognition, or metacognition) with the goal of durability and generalization." Even though this treatment could be effective to decrease the effects of mood disorders while they are active, our research is focusing on their efficacy in improving cognitive function rather than reducing symptoms. To that end, we are interested in the different techniques that fall under the umbrella of cognitive remediation which include computerized tests, one on one clinician-patient work, group clinician-patient work, and traditional pencil and paper interventions. Definition from Cherrie Galletly, Ashlee Rigby, "An Overview of Cognitive Remediation Therapy for People with Severe Mental Illness." 2013.

Methodology

Database Search

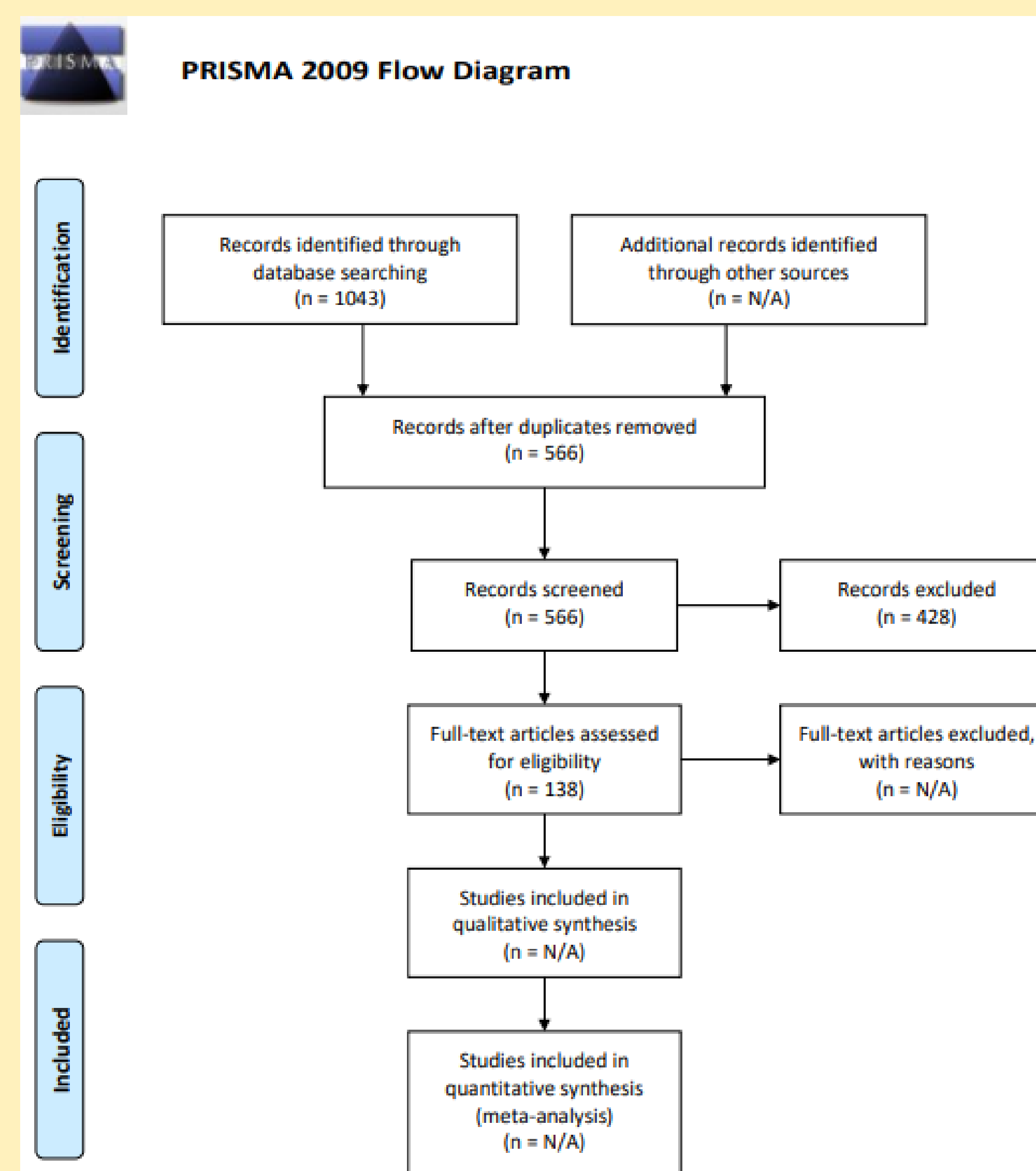
An initial and extensive search of seven different databases was conducted and resulted in 973 articles. The software we used is Covidence which follows the PRISMA flow diagram and screens out articles collected for duplicates before the abstracts are looked through manually. This second screening process is done by each researcher reading through abstracts for inclusion and exclusion criteria. Following that, the full texts of the articles are again read for these criteria to narrow down, but still include all relevant articles.

Inclusion Criteria

- ✓ Control group
- ✓ 70% of participants have active or remitted mood disorders as defined by the DSM-5 or the ICD
- ✓ Articles must be written or translated to English
- ✓ Published in or after 1980
- ✓ Include at least one intervention session
- ✓ Have at least one outcome measure of cognition
- ✓ Have an apparent effect size
- ✓ 50% or more of the intervention must be cognitive remediation

Exclusion Criteria

- ✗ Case studies
- ✗ Systematic reviews
- ✗ Textbook chapters
- ✗ Opinion pieces
- ✗ Literature reviews
- ✗ Participants younger than 18 years old



Materials

Databases included in the study were PubMed, PsycInfo, CINAHL, Academic Search Premier, Dissertations & Theses Global, Clinical trials (grey) Cochrane Clinical Trial Register. After our full text review, we will conduct basic searches in google and google scholar to find other works written by authors who have published articles on the topic. Following our initial search, relevant sources were imported into Covidence. Sources were screened in order to narrow our search to only relevant articles. Inclusion and exclusion criteria were implemented during this step. After collecting sources, we used the PRISMA diagram to organize our search. Initially, we imported 973 studies. Covidence removed 407 duplicate studies, leaving us with 566 studies to screen. After screening 566, 428 were deemed irrelevant, leaving us to further examine 138 sources. We are currently in the stage of importing full-texts to review.

Intervention

Cognitive Remediation

Primary Outcome

Increased Cognitive Functioning

Secondary Outcomes

Decreased Mood Symptoms

Improved Quality of Life

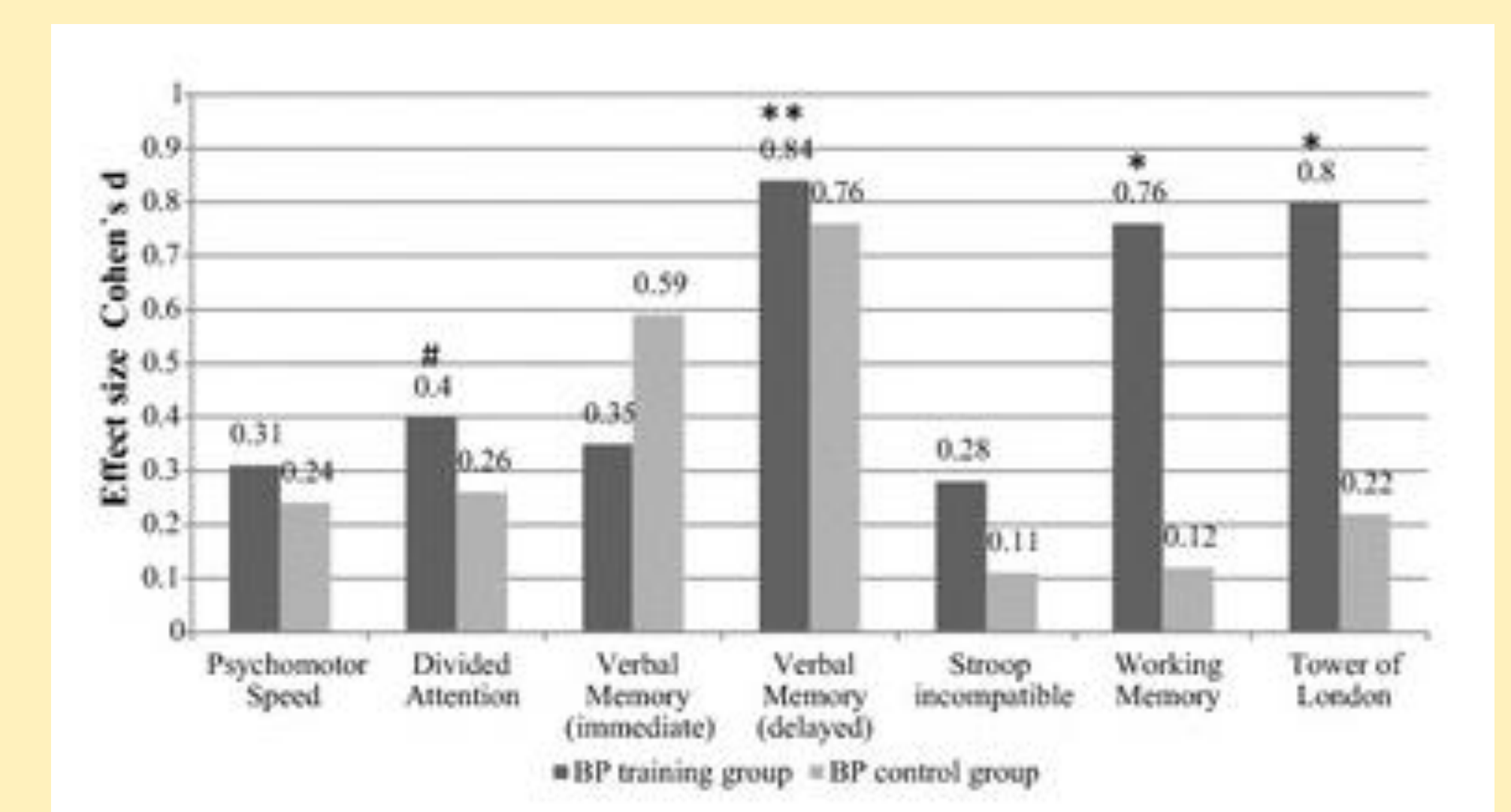
Results

Since this is a meta-analysis, the results are different from a traditional research project. We are not conducting experiments and analyzing our own data, but rather compiling the data from all relevant sources on the topic of cognitive remediation in mood disorders. We are analyzing this data for the efficacy of cognitive remediation as a treatment for the cognitive deficits caused by mood disorders. We will discuss long and short-term effects as well as the differences in types of intervention under the umbrella of cognitive remediation such as traditional, clinical-patient methods like paper-pencil tasks, computerized programs, or group therapy. The cognitive outcomes we will be comparing and measuring are attention, alertness, working memory, response inhibition, and planning which are all impacted by the degenerative nature of mood disorders. We will also assess the effects of this intervention on secondary outcomes such as mitigation of mood symptoms and quality of life by compiling and analyzing overlapping data from studies that focus on cognitive outcomes. It is currently unclear whether or not there will be enough quantitative data on secondary outcomes to come to any solid conclusions.

What does the research look like?

Cognitive remediation for bipolar patients with objective cognitive impairment: a naturalistic study

In this study, participants were split into two experimental groups: one cognitive remediation training group and one control group. Following the intervention, cognitive functioning, sub-depressive symptoms, quality of life, and psychosocial functioning were measured by the participants. Primary cognitive outcome measures included psychomotor speed and attention, verbal memory, executive functioning, working memory, and planning and problem solving. Similar to our research interests, secondary outcomes related to functioning and symptoms were also examined. Results from this study include findings that CRT can improve working memory, problem solving, and divided attention. Sub-depressive symptoms were reduced but no change was found in QoL or psychosocial functioning. While our research will not be a randomized controlled trial, we will be compiling results such as these. The figure below depicts results from the control group (light grey) and experimental group (dark grey).



Veoh J, Kopf J, Kittel-Schneider S, Deckert J, Reif A. Cognitive remediation for bipolar patients with objective cognitive impairment: a naturalistic study. Int J Bipolar Disord. 2017 Dec;5(1):8. doi: 10.1186/s40345-017-0079-3. Epub 2017 Apr 13. PMID: 28168631; PMCID: PMC5389951.

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