

# Cognitive-behavioural interventions for attention deficit hyperactivity disorder (ADHD) in adults.

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## Abstract

### BACKGROUND:

Attention deficit hyperactivity disorder (ADHD) is a developmental condition characterised by symptoms of inattention, hyperactivity and impulsivity, along with deficits in executive function, emotional regulation and motivation. The persistence of ADHD in adulthood is a serious clinical problem. ADHD significantly affects social interactions, study and employment performance. Previous studies suggest that cognitive-behavioural therapy (CBT) could be effective in treating adults with ADHD, especially when combined with pharmacological treatment. CBT aims to change the thoughts and behaviours that reinforce harmful effects of the disorder by teaching people techniques to control the core symptoms. CBT also aims to help people cope with emotions, such as anxiety and depression, and to improve self-esteem.

### OBJECTIVES:

To assess the effects of cognitive-behavioural-based therapy for ADHD in adults.

### SEARCH METHODS:

In June 2017, we searched CENTRAL, MEDLINE, Embase, seven other databases and three trials registries. We also checked reference lists, handsearched congress abstracts, and contacted experts and researchers in the field.

### SELECTION CRITERIA:

Randomised controlled trials (RCTs) evaluating any form of CBT for adults with ADHD, either as a monotherapy or in conjunction with another treatment, versus one of the following: unspecific control conditions (comprising supportive psychotherapies, no treatment or waiting list) or other specific interventions.

### DATA COLLECTION AND ANALYSIS:

We used the standard methodological procedures suggested by Cochrane.

### MAIN RESULTS:

We included 14 RCTs (700 participants), 13 of which were conducted in the northern hemisphere and 1 in Australia. Primary outcomes: ADHD symptoms CBT versus unspecific control conditions (supportive psychotherapies, waiting list or no treatment)- CBT versus supportive psychotherapies: CBT was more effective than supportive therapy for improving clinician-reported ADHD symptoms (1 study, 81 participants; low-quality evidence) but not for self-reported ADHD symptoms (SMD -0.16, 95% CI -0.52 to 0.19; 2 studies, 122 participants; low-quality evidence; small effect size).- CBT versus waiting list: CBT led to a larger benefit in clinician-reported ADHD symptoms (SMD -1.22, 95% CI -2.03 to -0.41; 2 studies, 126 participants; very low-quality evidence; large effect size). We also found significant differences in favour of CBT for self-reported ADHD symptoms (SMD -0.84, 95% CI -1.18 to -0.50; 5 studies, 251 participants; moderate-quality evidence; large effect size). CBT plus pharmacotherapy versus pharmacotherapy alone: CBT with pharmacotherapy was more effective than pharmacotherapy alone for clinician-reported core symptoms (SMD -0.80, 95% CI -1.31 to -0.30; 2 studies, 65 participants; very low-quality evidence; large effect size), self-reported core symptoms (MD -7.42 points, 95% CI -11.63 points to -3.22 points; 2 studies, 66 participants low-quality evidence) and self-reported inattention (1 study, 35 participants). CBT versus other interventions that included therapeutic ingredients specifically targeted to ADHD: we found a significant difference in favour of CBT for clinician-reported ADHD symptoms (SMD -0.58, 95% CI -0.98 to -0.17; 2 studies, 97 participants; low-quality evidence; moderate effect size) and for self-reported ADHD symptom severity (SMD -0.44, 95% CI -0.88 to -0.01; 4 studies, 156 participants; low-quality evidence; small effect size). Secondary outcomes CBT versus unspecific control conditions: we found differences in favour of CBT compared with waiting-list control for self-reported depression (SMD -0.36, 95% CI -0.60 to -0.11; 5 studies, 258 participants; small effect size) and for self-reported anxiety (SMD -0.45, 95% CI -0.71 to -0.19; 4 studies, 239

participants; small effect size). We also observed differences in favour of CBT for self-reported state anger (1 study, 43 participants) and self-reported self-esteem (1 study 43 participants) compared to waiting list. We found no differences between CBT and supportive therapy (1 study, 81 participants) for self-rated depression, clinician-rated anxiety or self-rated self-esteem. Additionally, there were no differences between CBT and the waiting list for self-reported trait anger (1 study, 43 participants) or self-reported quality of life (SMD 0.21, 95% CI -0.29 to 0.71; 2 studies, 64 participants; small effect size). CBT plus pharmacotherapy versus pharmacotherapy alone: we found differences in favour of CBT plus pharmacotherapy for the Clinical Global Impression score (MD -0.75 points, 95% CI -1.21 points to -0.30 points; 2 studies, 65 participants), self-reported depression (MD -6.09 points, 95% CI -9.55 points to -2.63 points; 2 studies, 66 participants) and self-reported anxiety (SMD -0.58, 95% CI -1.08 to -0.08; 2 studies, 66 participants; moderate effect size). We also observed differences favouring CBT plus pharmacotherapy (1 study, 31 participants) for clinician-reported depression and clinician-reported anxiety. CBT versus other specific interventions: we found no differences for any of the secondary outcomes, such as self-reported depression and anxiety, and findings on self-reported quality of life varied across different studies.

#### AUTHORS' CONCLUSIONS:

There is low-quality evidence that cognitive-behavioural-based treatments may be beneficial for treating adults with ADHD in the short term. Reductions in core symptoms of ADHD were fairly consistent across the different comparisons: in CBT plus pharmacotherapy versus pharmacotherapy alone and in CBT versus waiting list. There is low-quality evidence that CBT may also improve common secondary disturbances in adults with ADHD, such as depression and anxiety. However, the paucity of long-term follow-up data, the heterogeneous nature of the measured outcomes, and the limited geographical location (northern hemisphere and Australia) limit the generalisability of the results. None of the included studies reported severe adverse events, but five participants receiving different modalities of CBT described some type of adverse event, such as distress and anxiety.