Meta-analysis comparing different behavioral treatments for late-life anxiety

CRD summary
The authors concluded that cognitive behavioral therapy (CBT) and relaxation training effectively reduced anxiety disorders or symptoms. CBT with or without relaxation training was no more effective than relaxation training alone and there were no differences between treatments in reducing depressive symptoms. The reliability of this review is unclear due to several potential methodological flaws throughout the review process.

Authors' objectives
To evaluate the effect of psychotherapeutic interventions in reducing anxiety and depressive symptoms in older adults.

Searching
MEDLINE and PsycINFO were searched to identify relevant articles published in English before September 2007. Search terms were reported. Field experts were contacted to locate additional studies.

Study selection
Studies of psychotherapeutic interventions to treat anxiety disorders or symptoms that included at least five participants aged at least 55 years old were eligible for inclusion in the review. As a minimum: subjective anxiety symptoms had to be reported; treatment had to include at least two sessions; and sufficient data for calculation of effect sizes had to be reported from validated outcome measures for anxiety and depression. Follow-up was not assessed. Most studies used a trait anxiety measure (Spielberger et al.) or the Beck Depression Inventory. Data from mixed construct measures were excluded. Included comparisons comprised cognitive behavioural therapy (CBT), relaxation training, active control (including supportive counselling, psychotherapy, group discussion, psychoeducation, time for reflection and weekly medication management) and wait list or no treatment. Most interventions were delivered as group sessions. Mean age of included participants ranged from 63 to 84 years. Most participants suffered from generalised anxiety disorder and panic disorder.

The authors stated neither how the papers were selected for the review nor how many reviewers performed the selection.

Assessment of study quality
The authors did not state that they assessed validity.

Data extraction
Pre- and post-intervention outcome data were extracted to calculate the standardised mean difference (SMD) using the Hedges' g estimate and 95% confidence intervals (CI) were calculated. Substitute data were used from other studies where means and standard deviations were not available. Study authors were contacted for missing data, where necessary.

The authors did not state how many reviewers performed the data extraction.

Methods of synthesis
SMDs and 95% CIs were pooled in fixed-effect meta-analysis. Heterogeneity was assessed using the Q statistic. Pooled effect sizes were calculated within treatment groups for: CBT with and without relaxation training; relaxation training alone; active control; and wait list or no treatment conditions. Pooled effect sizes were calculated for studies that compared an active control group with CBT with and without relaxation training and with relaxation training alone.

Results of the review
Nineteen studies (n=522) were included in the meta-analysis. Ten studies (n=125, but n=257 was reported in the paper)
compared treatments with an active control group.

**Anxiety symptoms:**

Within-group analyses demonstrated statistically significant large effects for: CBT without relaxation training (SMD 1.18, 95% CI 0.78 to 1.59); CBT with relaxation training (SMD 0.86, 95% CI 0.63 to 1.08); and relaxation training alone (SMD 0.91, 95% CI 0.68 to 1.24). There was a medium effect for active control conditions (SMD 0.50, 95% CI 0.22 to 0.78) compared with a non-significant small effect for wait list or no treatment. Pairwise comparisons showed a statistically significant difference only between CBT without relaxation training and the active control group. There was statistically significant heterogeneity between all studies (p=0.001), but not among studies within each treatment group.

Comparisons of treatments with an active control showed a large and statistically significant effect for relaxation training alone (SMD 0.90, 95% CI 0.44 to 1.44) and non-significant small effects for CBT with or without relaxation training. There was statistically significant heterogeneity between the studies (p<0.0001) and within the relaxation training treatment groups (p<0.0001). Pairwise comparisons were not significant.

**Depressive symptoms:**

Within-group analyses demonstrated statistically significant large effects for: CBT without relaxation training (SMD 0.78, 95% CI 0.38 to 1.17); CBT with relaxation training (SMD 0.77, 95% CI 0.55 to 1.00); and relaxation training alone (SMD 0.77, 95% CI 0.26 to 1.27). There was a medium effect for active control conditions (SMD 0.53, 95% CI 0.24 to 0.82) compared with a non-significant small effect for wait list or no treatment. Pairwise comparisons showed a significant difference only between CBT with relaxation training and the wait list or no treatment group. There was no evidence of heterogeneity.

Comparisons with an active control showed small effect sizes, with no statistically significant differences between any of the treatments. There was statistically significant heterogeneity between studies (p=0.01), and amongst studies of relaxation training (p=0.001).

**Authors’ conclusions**

CBT and relaxation training were effective psychosocial treatments for older adults with anxiety disorders or symptoms. CBT (with or without relaxation training) does not appear to be more effective than relaxation training alone. There were no differences between treatments in terms of depressive symptoms. A cautious interpretation of these conclusions was advised in light of the limitations of the literature.

**CRD commentary**

This review addressed a clear research question. Inclusion criteria were specified broadly for interventions and more explicitly for participants and outcomes. The search strategy appeared to contain a limited number of sources and potential for language and publication biases could not be ruled out. There was no reported detail on how the review process was carried out, which meant that errors and biases may have occurred in the selection and data extraction of included studies. There was no reported validity assessment and details of the included study designs were not provided, which made it difficult to interpret the reliability of the findings. The decision to synthesis the data using a fixed-effect analysis was questionable given that significant variation was reported among the included studies. The authors offered a cautious conclusion that reflected the evidence presented. However, the reliability of this review is unclear due to several potential methodological flaws identified above.

**Implications of the review for practice and research**

**Practice:** The authors did not state any implications for practice.

**Research:** The authors stated that future studies should include and describe active comparison conditions and identify the constituent parts of multicomponent interventions. The comparison of two or more distinct and well-defined interventions with a well-defined control condition was needed. Use of the Hamilton Anxiety Scale was recommended.

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