Psychological treatments in schizophrenia - II: meta-analyses of randomized controlled trials of social skills training and cognitive remediation


Authors' objectives
To assess the effect of social skills training and cognitive remediation in the treatment of the negative symptoms of schizophrenia.

Searching
Biological Abstracts (1980 to 1999), CINAHL (1982 to 1999), the Cochrane Library (Issue 2, 1999), the Cochrane Schizophrenia Group's Register of Trials (August 1999), EMBASE (1980 to 1999), MEDLINE (1966 to 1999), PsycLIT (1887 to 1999), SIGLE (1990 to 1999) and Sociofile (1980 to 1999) were searched. The authors stated that details of the search strategy were available on request. The reference lists in reviews and selected studies were also checked.

Study selection
Study designs of evaluations included in the review
Randomised controlled trials (RCTs) were eligible for inclusion. Studies with a greater than 50% drop-out rate were excluded.

Specific interventions included in the review
Studies that compared either social skills training or cognitive remediation with standard care or other active interventions were eligible for inclusion. Studies of social skills training (group or individual patient) had to use a structured psychosocial intervention aimed at reducing distress and difficulty in social situations. Studies of cognitive remediation had to aim to improve a specified cognitive function.

Participants included in the review
The inclusion criteria were not explicitly defined in terms of the participants, but it was clear that patients with schizophrenia were included. The included studies were of patients with schizophrenia or related disorders including delusional disorders, schizophreniform disorder and schizoaffective disorder. The studies included many participants with co-morbid mental disorders and excluded those with organic brain disease, substance abuse and low IQ. Studies that involved patients with other diagnoses were only included if the results were presented separately for people with schizophrenia.

The participants in the social skills training studies had a mean age of 36 years, 85.2% were male (where reported), and the mean duration of the illness was 12.5 years (reported in 4 studies). The participants in the cognitive remediation studies had a mean age of 36.7 years and 74% were male (reported in 3 studies). They were diagnosed as having schizophrenia using the American Psychiatric Association's DSM criteria (DSM-III-R or DSM-IV).

Outcomes assessed in the review
For social skills interventions, the review assessed relapse, noncompliance with treatment, global adjustment, social functioning and quality of life. For cognitive remediation interventions, the review assessed attention, visual and verbal memory, mental state and executive functioning.

In the included social skills studies, global adjustments were assessed using the Global Adjustment Scale and the Nurses Global Impression Scale, quality of life using a profile of adaptation of life and the Lehman Quality of Life Scale, and social functioning using a variety of measures to assess. In the included cognitive remediation studies, mental state was assessed using the Brief Psychiatric Rating Scale.

How were decisions on the relevance of primary studies made?
Two reviewers independently examined all references and resolved any disagreements through discussion with a third
reviewer if necessary.

**Assessment of study quality**
No formal assessment of validity was undertaken, but only RCTs were included in the review.

**Data extraction**
The authors did not state how the data were extracted for the review, or how many reviewers performed the data extraction.

The data were extracted and analysed on an intention-to-treat basis. Data were extracted on the number of participants, intervention, method, duration, comparison group and outcome measures for social skills studies, and on the number of participants, interventions (including duration and frequency) and outcome measures for the cognitive remediation trials.

**Methods of synthesis**

How were the studies combined?
The studies were grouped according to the intervention (social skills training or cognitive remediation) and the characteristics of the participants were summarised. For dichotomous data, pooled odds ratios (ORs) and 95% confidence intervals (CIs) were calculated using fixed-effect (Mantel-Haenszel) and random-effects (DerSimonian and Laird) methods (see Other Publications of Related Interest). For continuous data, pooled effect sizes (ESs) and 95% CIs were calculated using fixed-effect (Hedges) and random-effects (DerSimonian and Laird) methods. Where studies used a variety of outcome measures to assess similar outcomes, the studies were discussed individually. The number-needed-to-treat and 95% CI were estimated.

How were differences between studies investigated?
The reviewers examined graphs of results and tested statistical heterogeneity using the Q statistic (P<0.5 indicated significant heterogeneity). Random-effects models were used to pool the data where significant heterogeneity was found.

**Results of the review**
There were 9 RCTs of social skills training (471 patients) and 5 RCTs of cognitive remediation (203 patients according to the tables).

Social skills training.

A pooled analysis of 4 RCTs (125 patients) showed no significant difference in relapse in the first year of treatment between social skills training and all other treatments; the OR (fixed-effect model) was 0.74 (95% CI: 0.43, 1.29); no significant heterogeneity was found (P=0.29). A pooled analysis of 2 RCTs (264 patients) suggested that other active treatments may be more effective in reducing relapse rates at one to two years than social skills training; the OR (random-effects model) was 3.88 (95% CI: 0.22, 69.67); significant heterogeneity was found (P=0.02).

A pooled analysis of 3 RCTs (155 patients) showed no significant difference in relapse in the first year of treatment between social skills training and other active treatments; the OR (fixed-effect model) was 0.62 (95% CI: 0.29, 1.33); no significant heterogeneity was found (P=0.54).

A pooled analysis of 6 RCTs (235 patients) showed no significant difference in treatment noncompliance between social skills training and all other treatments; the OR (fixed-effect model) was 1.31 (95% CI: 0.79, 2.17); no significant heterogeneity was found (P=0.64).

A pooled analysis of 2 RCTs (92 patients) showed no significant difference in global adjustment between social skills training and active treatments; the ES (fixed-effect model) was 0.153 (95% CI: -0.56, 0.26); no significant heterogeneity was found (P=0.56).
Studies of social function and quality of life could not be pooled due to the diversity of the outcome measures. One RCT showed no significant difference in social functioning between social skills training and a discussion group. Another showed that social skills training improved social adjustment in comparison with supportive psychotherapy. One RCT showed no significant difference between social skills training and psychosocial occupational therapy. Some RCTs showed benefit on some outcome measures but the outcomes used in each RCT differed.

Cognitive remediation.

A pooled analysis of 2 RCTs (87 patients) showed no significant difference in attention between cognitive remediation and control treatments; the ES (fixed-effect or random-effects model) was 0.11 (95% CI: -0.31, 0.53).

A pooled analysis of 4 RCTs (117 patients) showed no significant difference in verbal memory between cognitive remediation and control treatments; the ES (fixed-effect or random-effects model) was 0.14 (95% CI: -0.23, 0.50).

A pooled analysis of 2 RCTs (48 patients) showed no significant difference in visual memory between cognitive remediation and control treatments; the ES (random-effects model) was 0.35 (95% CI: -0.46, 1.16).

A pooled analysis of 2 RCTs (84 patients) showed no significant difference in mental state between cognitive remediation and control treatments; the ES (fixed-effect or random-effects model) was 0.23 (95% CI: -0.66, 0.20).

Studies of executive functioning could not be pooled due to the diversity and multiplicity of the outcome measures.

Authors' conclusions
There is no good evidence of a benefit from social skills training and no evidence of a benefit for cognitive remediation.

CRD commentary
The review question was clear in terms of the study design, intervention, participants and outcomes. Several relevant sources were searched and details of the search strategy were reported to be available from the authors. It was unclear whether any language restrictions had been applied and no attempt was made to locate unpublished studies, thus raising the possibility of publication bias. Two reviewers independently selected the studies, which reduces the potential for bias and errors. Only RCTs were included in the review, but no formal validity assessment was undertaken. Hence, the quality of the evidence cannot be evaluated.

The data were extracted on an intention-to-treat basis, but no other details were reported. Some relevant information on the included studies was tabulated. The data were combined in a meta-analysis and statistical heterogeneity was assessed for studies of social skills training, but not cognitive remediation studies. Sensitivity analyses were carried out comparing social skills training with different control treatments. There was no significant difference between treatments for most of the outcomes, but the authors did not discuss the power of the meta-analyses to detect a specified difference. Consequently, it was unclear whether findings of no significant difference were due to a small sample size or were likely to indicate a true lack of difference between treatments. This latter point must be borne in mind when interpreting the authors' conclusions.

Implications of the review for practice and research
Practice: The authors stated that there is no evidence to justify the use of cognitive remediation (see CRD Commentary on the possibility of underpowered meta-analyses) and that social skills training cannot be recommended for clinical practice.

Research: The authors stated that, given the results of the review, it may be hard to justify a large trial of social skills training and that the focus should be on redeveloping social skills training to improve functioning over a wider range of outcomes. They suggested that research should be directed at the wider psychological and environmental interventions that take account of cognitive deficits present in patients with schizophrenia, but that aim to improve functional deficits. The authors also stated that any further trials should use standardised measures.
Bibliographic details

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12171373

Other publications of related interest

Indexing Status
Subject indexing assigned by NLM

MeSH
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Record Status
This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.