
The efficacy of problem solving therapy in reducing mental and physical health problems: a meta-analysis

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CRD summary

This review assessed the efficacy of problem-solving therapy (PST) in helping individuals to overcome any type of health problem. The authors concluded that there is strong evidence for the effectiveness of PST. The conclusion was derived from a meta-analysis of clinically and statistically variable data and there were a number of methodological concerns, therefore it may not be reliable.

Authors' objectives

To assess the efficacy of problem-solving therapy (PST) in helping individuals to overcome health problems.

Searching

PsycINFO and PubMed were searched using the term 'problem solving'. Relevant articles from this search were used to obtain additional articles. Treatment studies cited in a textbook and two meta-analyses were also evaluated.

Study selection

Study designs of evaluations included in the review

Only randomised controlled trials (RCTs) were eligible for the review.

Specific interventions included in the review

Studies of PST, which involved a therapist teaching a client how to use a step-by-step process to solve life problems, were eligible for inclusion. Studies had to either describe the problem-solving steps that the participants were trained in or state that the PST followed specific named guidelines. Studies of interpersonal cognitive PST and studies in which PST was combined with other therapy methods (e.g. assertion training, relaxation training, communication training, systematic reinforcement and information booklets) were excluded. The included studies evaluated individual, group and family PST with or without homework. Treatment duration ranged from 2 to 52 hours. The comparators included no treatment, treatment as usual, attention-placebo treatment or another bona fide treatment for the condition.

Participants included in the review

Studies of people with any mental or physical health problem were eligible for inclusion. The majority of studies involved people with mental health problems, although studies of people with obesity and low back pain were also included.

Outcomes assessed in the review

Studies reporting changes in any measure of physical or mental health were eligible for the review. The specific outcomes evaluated in the included studies were not reported.

How were decisions on the relevance of primary studies made?

The authors did not state how the papers were selected for the review, or how many reviewers performed the selection.

Assessment of study quality

The authors did not state that they assessed validity.

Data extraction

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

extraction.

Data on means and standard deviations of measures of health in each treatment group were used to calculate the standardised mean difference (d) and its 95% confidence interval (CI) for each study.

Methods of synthesis

How were the studies combined?

The studies were combined by meta-analysis using a mixed-effects (method of moments random-effects) model. A fail-safe N (number of studies with an effect size (d) of 0 required to make the pooled value of d no longer statistically significant) was calculated to assess the possible impact of publication bias.

How were differences between studies investigated?

Statistical heterogeneity was assessed using the Q statistic. Subgroup analyses were used to investigate the effects of type of comparator, assessment of outcomes (self-report, objective or mixed), condition (depression-related or other), involvement of a PST developer in the research, source of participants (clinical sample or self-referral), treatment format (individual or group/family), homework and training in problem orientation. Potential outliers were investigated following the recommendations of Tabachnik and Fidell.

Results of the review

Thirty-one studies (n=2,161) were included.

Across all studies and analyses, PST was significantly superior to the comparators (d=0.56, 95% CI: 0.36, 0.76, p<0.001). A similar result was obtained using only one analysis per study (d=0.54, 95% CI: 0.31, 0.77, p<0.001). Statistical heterogeneity was significant (p<0.001) for both meta-analyses. Values of the fail-safe N were 179 and 136, respectively, indicating that a large number of non significant unpublished studies would have to have been missed to negate the findings. PST was significantly superior to waiting list or no treatment, treatment as usual and attention-placebo, but not to other bona fide treatments. PST was significantly more effective in studies involving homework and training in problem orientation as part of the intervention, and in those in which one of the developers of PST was involved in the research, than in studies lacking these features.

Authors' conclusions

The results of the meta-analysis provide strong evidence for the effectiveness of PST in treating mental or physical health problems.

CRD commentary

The review addressed a clear question. Inclusion criteria for the interventions and study designs were clear, whereas those for the participants were very broad and the review did not report the specific outcomes evaluated in included studies. The authors searched a number of sources but only one search term was used, which makes it possible that relevant studies could have been missed. It was unclear whether any language restrictions were imposed on the search. The authors made no attempt to locate unpublished studies but they did attempt to assess the risk of publication bias using the 'fail-safe N' method. The methods used to select the studies and extract the data were not reported, so the risk of bias and errors arising during the review process is difficult to assess. It appears that the validity of the included studies was not assessed; hence the results of the included studies and any synthesis derived from them might not be reliable.

Some details of the included studies were presented, but the results were only presented as effect sizes, which makes it difficult to assess the outcomes investigated and the details of the changes observed. The studies were combined in a meta-analysis. The authors investigated potential sources of heterogeneity and used a random-effects model (which tends to give more conservative conclusions than a fixed-effect model) for the meta-analysis. However, in view of the potential range of conditions and outcomes included and the statistical heterogeneity observed for the main comparison, pooling of the studies might not have been appropriate. The methodological and reporting issues highlighted above

mean that the authors' conclusions may not be reliable.

Implications of the review for practice and research

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

Research: The authors stated that further outcome studies of interpersonal cognitive PST are required, to enable a meta-analysis of this form of PST.

Bibliographic details

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