Psychological treatments for irritable bowel syndrome: a systematic review and meta-analysis

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CRD summary
This generally well-conducted meta-analysis looked at the effect of a range of different psychological treatments for improving symptoms related to irritable bowel syndrome. Though the authors concluded that psychological treatment appears beneficial, they added that the available evidence did not allow them to investigate the effects of any specific approach to psychological treatment. A more focused meta-analysis might have been more appropriate.

Authors' objectives
To assess the quality of existing literature on psychological treatments for irritable bowel syndrome (IBS) and to quantify the evidence for their efficacy.

Searching
The Cochrane Controlled Trials Register (search dates not stated), MEDLINE (1966 to 2002), PsycLIT (1987 to 2002), EMBASE (1992 to 2002), CINAHL (1982 to 2002), BIOSIS Previews (1990 to 2002) and the Social Sciences Citation Index (1973 to 2002) were searched; the search terms are available from the authors. The electronic searches were supplemented by searching the reference lists of identified RCTs and systematic reviews. The search was restricted to papers published in English in peer-reviewed journals.

Study selection
Study designs of evaluations included in the review
Randomised controlled trials (RCTs) were included in the review.

Specific interventions included in the review
Studies were included if they evaluated psychological treatment. The specific treatments included: stress management, relaxation techniques (e.g. progressive muscle relaxation, relaxation response meditation), biofeedback, cognitive-behaviour therapy (CBT), educational classes, group or individual hypnotherapy, psychotherapy, self-help support groups and multi-component psychological treatment.

Participants included in the review
Studies of adults with IBS were included in the review. The participants in the included studies were predominantly female with an average duration of IBS (where stated) ranging from 1.2 to 18.4 years.

Outcomes assessed in the review
The authors did not state any inclusion criteria specifically in relation to the outcomes, but did state that the primary outcomes of interest were IBS-related gastrointestinal symptoms (pain, bowel dysfunction), with psychological outcomes (e.g. depression, anxiety) as secondary outcomes. These outcomes were measured on a range of scales including, amongst others, the Short Form Health Survey-36, General Health Questionnaire, Dysfunctional Attitudes Scales, Automatic Thoughts Questionnaire, and the Hospital Anxiety and Depression scale.

How were decisions on the relevance of primary studies made?
Three reviewers assessed papers for inclusion, with decisions made by consensus.

Assessment of study quality
The quality of the included studies was assessed according to a 29-point scale, incorporating 23 items from a published scale that addresses five primary dimensions: patient selection, interventions, outcome assessment, data presentation.
and statistical analysis, and investigator. The six additional items appear to address items specific to IBS clinical trials. The studies could receive a score of between 0 and 58. Three reviewers assessed the validity of the included papers, with any disagreements resolved by consensus.

Data extraction
Three reviewers extracted the data from the included papers, with any disagreements resolved by consensus. Both dichotomous and continuous outcomes were extracted.

Methods of synthesis
How were the studies combined?
Dichotomous outcome data were pooled using the Mantel-Haenszel technique to give a summary odds ratio (OR) with associated 95% confidence interval (CI). This summary OR was also expressed as a summary number-needed-to-treat (NNT). Continuous outcome data were combined using the weighted standardised effect size approach suggested by Hedges and Olkin.

How were differences between studies investigated?
Statistical heterogeneity was investigated using the Q statistic.

Results of the review
Thirty-two RCTs (n greater than 967) were included in the review. Seventeen of these provided data suitable for meta-analysis.

The median quality score of the 32 RCTs included in the review was 20 out of a possible 58 (interquartile range, IQR: 16.5, 26.5). The median quality score was significantly higher for RCTs included in the meta-analyses (24, IQR: 18.5, 20) than for those excluded from the meta-analyses (17, IQR: 14, 18).

Improvement (defined as a 50% improvement in a composite symptom score derived from daily diaries completed by patients) was significantly greater for participants receiving treatment than for waiting-list controls (10 RCTs, n=185; OR 12, 95% CI: 5.56, 25.96). The rounded NNT was 2.

Treatment was associated with a significant reduction in abdominal pain (9 RCTs, n=399; d=0.266, 95% CI: 0.069, 0.464).

Treatment was associated with a significant reduction in bowel dysfunction (11 RCTs, n=423; d=0.574, 95% CI: 0.381, 0.767).

Treatment was associated with a significant reduction in depression (8 RCTs, n=337; d=0.540, 95% CI: 0.331, 0.749).

Treatment was associated with a significant reduction in anxiety (6 RCTs, n=194; d=0.39, 95% CI: 0.093, 0.695).

Authors’ conclusions
Psychological interventions are, as a class of interventions, effective in reducing symptoms compared with a pooled group of control conditions. Questions about the relative superiority of specific psychological treatments and the influence of active versus non-specific treatment effects remain unanswered.

CRD commentary
This review posed a fairly broad question that was largely supported by appropriate inclusion criteria. The authors reported searching multiple electronic databases, as well as references of identified papers, to identify relevant studies for inclusion. However, this search was limited to English language publications, which the authors themselves admit might have introduced publication bias. A detailed validity assessment was undertaken, though this was not formally used to weight the studies included in the meta-analyses. Efforts to minimise error and bias in the study selection and
data extraction processes appear to have been made through the use of multiple reviewers. Key details of the included studies were tabulated and where studies were synthesised, this was done using appropriate statistical methods. The authors’ conclusion, that the relative effects of specific psychological interventions could not be established, seems appropriate, though the meaningfulness of pooling trials with varied interventions, and in some cases different comparators, could be questioned.

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

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

Research: The authors stated that replication with larger samples is imperative, as there is evidence that small samples may overestimate effects. In addition, the authors stated that the question of whether observed effects were attributable to non-specific effects of treatment requires an answer urgently.

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