Review: psychological interventions do not reduce all cause or cardiac mortality in coronary heart disease


In patients with coronary heart disease (CHD), do psychological interventions (PSIs), particularly stress management training (SMT), reduce mortality and morbidity and improve psychological wellbeing?

**METHODS**

Data sources: Cochrane Controlled Trials register (Issue 4, 2001), Medline (1999–2001), EMBASE/Excerpta Medica (1998–2001), Psychnfo, and CINAHL (up to 2001); bibliographies of relevant articles; and experts.

Study selection and assessment: randomised controlled trials (RCTs) (published in any language) that lasted ≥6 months and compared non-pharmacological PSIs with usual care or no intervention in adults with CHD.

Outcomes: all cause and CHD related mortality; myocardial infarction (MI); revascularisation (coronary artery bypass grafting or percutaneous transluminal coronary angioplasty); and anxiety and depression (each measured using several different scales).

**MAIN RESULTS**

36 RCTs (12,841 patients) met the selection criteria. All PSIs. Comparisons included PSIs alone (15 RCTs) or PSIs plus other rehabilitation interventions (20 RCTs) with usual care, and PSIs plus other rehabilitation interventions with rehabilitation interventions alone (6 RCTs). Meta-analyses were done using a random effects model when significant heterogeneity was detected. The combined intervention and control groups did not differ for all cause or CHD related mortality or revascularisation (all p > 0.05). However, the rate of non-fatal MI (with evidence of publication bias) was lower in the intervention group than in the control group (9 RCTs) and depression (SMD –0.3, CI –0.48 to –0.13) (11 RCTs) were greater in the intervention group than in the control group.

SMT (18 RCTs). The groups did not differ for rates of all cause mortality or revascularisation, or reduction in level of anxiety (all p > 0.05). The intervention group had lower rates of cardiac mortality and non-fatal MI (borderline significance) than the control group (9 RCTs). The intervention group had greater reduction in depression than the control group (SMD –0.32, CI –0.56 to –0.08) (8 RCTs).

**CONCLUSIONS**

In patients with CHD, combined psychological interventions have some beneficial effects on psychological wellbeing, but not on all cause or CHD related mortality. Stress management alone does not appear to significantly affect these outcomes.

**Commentary**

Cardiac rehabilitation and secondary prevention services may include PSIs. PSIs vary considerably in their objectives, mode of delivery, initiation, duration, and the training and experience of service providers. Previous reviews evaluating the effect of PSIs have shown benefits relating to psychological wellbeing, morbidity or mortality, and cardiovascular risk factors. Limitations of reviews on this topic include the risk inherent in comparing heterogeneous interventions and extrapolating from conclusions drawn. Results emerging from populations with a broad range of ages and diagnostic categories are likely to differ from those of high distress subgroups who may have more to gain from such interventions. The review by Rees et al acknowledges such limitations but appears critical of the efficacy of SMT alone. Sufficient evidence of benefits from combined PSIs exists to warrant appropriate usage, although better identification of specific need is important. For example, depression is associated with risk of acute MI and increased morbidity and mortality after MI. It also predicts poor compliance with both pharmacological and non-pharmacological interventions, thus increasing the likelihood of poor outcomes. Practitioners should therefore assess psychological risk, evaluate the robustness of interventions being provided, target groups with identified needs, and evaluate outcomes at appropriate time frames. Further research should examine the effect of defined PSIs and analyse the influence of possible confounding factors such as timing and duration, the expertise of service providers, and the effect of multiple comorbidities.

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**Psychological interventions (PSIs) (with or without rehabilitation) v control (usual care or rehabilitation) for coronary heart disease**

<table>
<thead>
<tr>
<th>Outcomes at 5 months to 5 years</th>
<th>Number of trials (n)</th>
<th>Comparisons</th>
<th>Weighted event rates</th>
<th>RRR (95% CI)</th>
<th>NNT (CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-fatal MI</td>
<td>18 (10 200)</td>
<td>All PSIs v control</td>
<td>7% v 9%</td>
<td>20% [9 to 30]</td>
<td>50 [34 to 100]</td>
</tr>
<tr>
<td>Non-fatal MI</td>
<td>8 (3990)</td>
<td>SMT v control</td>
<td>4% v 6%</td>
<td>29% [8 to 45]</td>
<td>50 [34 to 101]</td>
</tr>
<tr>
<td>Cardiac mortality</td>
<td>4 (1412)</td>
<td>SMT v control</td>
<td>3% v 6%</td>
<td>37% [0 to 60]</td>
<td>34 [20 to 110]</td>
</tr>
</tbody>
</table>

*MI = myocardial infarction; SMT = stress management training. Other abbreviations defined in glossary; weighted event rates, RRR, NNT, and CI calculated from data in article using a fixed effects model.
†Borderline significance.
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