Review: group based education in self management strategies improves outcomes in type 2 diabetes mellitus


Q In patients with type 2 diabetes mellitus, does group based education (GBE) in self management improve clinical, lifestyle, and psychosocial outcomes?

METHODS

Data sources: electronic databases including Cochrane Library, Medline, CINAHL, ERIC, ASSIA, AMED, PsychINFO, and EMBASE/Excerpta Medica; bibliographies of relevant articles; and contact with experts in the field.

Study selection and assessment: randomised controlled trials (RCTs) or clinical controlled trials (CCTs) that compared GBE for adults with type 2 diabetes mellitus (delivered in primary or secondary care settings, based on learner/patient centred education, >6 participants in a group, and >1 session of 1 hour) with a control condition (usual care, no intervention, or a waiting list).

Outcomes: clinical (glycated haemoglobin, fasting glucose, and medication use), lifestyle (diabetes knowledge), and psychosocial (quality of life and empowerment/self efficacy) measures.

MAIN RESULTS

8 RCTs (n = 1260) and 3 CCTs (n = 272) met the selection criteria. Meta-analysis (using a random effects model) showed that glycated haemoglobin and fasting glucose concentrations were lower in the intervention group than in the control group (table) and that diabetes knowledge scores were greater in the intervention group than in the control group (table). More patients in the intervention group than in the control group reduced their use of diabetes medication over 12–14 months (5 trials, n = 654; relative difference 0.95, 95% CI 0.72 to 1.18). More patients in the intervention group than in the control group (3 trials, n = 432; standardised mean difference 0.95, 95% CI 0.72 to 1.18). More patients in the intervention group than in the control group reduced their use of diabetes medication over 12–14 months (5 trials, n = 654; relative benefit increase 82%, CI 202 to 2738). 1 RCT (n = 314) reported greater total empowerment scores in the intervention group than in the control group throughout follow up (p values <0.05).

CONCLUSION

Group based education in self management strategies improves outcomes in patients with type 2 diabetes mellitus.

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Sources of funding: National Health Service [Executive] North West UK and British Dietetic Association UK.

Commentary

The review by Deakin et al is the most recent of 4 meta-analyses published since 2002 and uniquely addresses studies of GBE with a broad range of outcomes and >6 months of follow up. The topic is important because of the high prevalence of type 2 diabetes and the increasing emphasis on GBE rather than one-on-one educational encounters. Deakin et al reported that GBE was associated with greater improvement in glycated haemoglobin over a longer duration than that shown in previous meta-analyses.

However, several critical methodological issues limit the conclusiveness of this review. Firstly, Deakin et al purposely excluded studies using attention control groups. Therefore, one cannot determine whether group differences resulted from simply enrolling in a study or from the effect of the intervention itself. Secondly, using a priori established quality criteria, the authors rated 9 of the 11 included studies as poor quality, with a high risk of serious bias and rated none as being at low risk of major bias.

Important methodological deficiencies in the studies included inadequate allocation concealment; substantial, and often differential, loss to follow up; and failure to use an intention to treat approach to the analyses. Although the authors did several sensitivity analyses, these analyses are limited by the small number of studies that could be included. Finally, many of the studies did not examine other important health outcomes, such as the development or progression of diabetes complications and changes in blood pressure, lipid profiles, or weight.

Deakin et al identify the need for well designed studies examining the effects of GBE on a broad range of health outcomes, including cost effectiveness. A strong body of evidence is required to assist clinicians, policy makers, and health planners in their decision making.

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**Group based education (GBE) in self management strategies vs a control condition (usual care, no intervention, or a waiting list) in type 2 diabetes mellitus**

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Follow up in months</th>
<th>Number of trials (n)</th>
<th>Weighted means</th>
<th>Control</th>
<th>Weighted mean difference (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glycated haemoglobin (%)</td>
<td>4–6</td>
<td>3 (395)</td>
<td>9.53</td>
<td>10.88</td>
<td>–1.35 (–1.93 to –0.78)</td>
</tr>
<tr>
<td></td>
<td>12–14</td>
<td>7 (1044)</td>
<td>7.93</td>
<td>8.75</td>
<td>–0.82 (–0.99 to –0.65)</td>
</tr>
<tr>
<td></td>
<td>24</td>
<td>2 (333)</td>
<td>6.54</td>
<td>7.51</td>
<td>–0.97 (–1.40 to –0.54)</td>
</tr>
<tr>
<td>Fasting blood glucose concentration (mmol/l)</td>
<td>12–14</td>
<td>4 (641)</td>
<td>9.55</td>
<td>10.72</td>
<td>–1.17 (–1.63 to –0.72)</td>
</tr>
</tbody>
</table>

*CI defined in glossary; weighted means calculated from data in article.*