A multidisciplinary community-based rehabilitation program improved social functioning in severe traumatic brain injury


**Question**
In patients with severe traumatic brain injury (TBI), is a multidisciplinary community-based outreach rehabilitation program more effective than information only?

**Design**
Randomized (allocation concealed*), blinded (outcome assessors),* controlled trial with a mean follow-up of 24.8 months.

**Setting**
An urban setting in London, England, UK.

**Patients**
110 patients who sustained severe TBI 3 months to 20 years previously and had no other neurologic conditions. 94 patients (85%, mean age 34 y, 76% men) participated in the end-of-study assessment.

**Intervention**
54 patients were allocated to a multidisciplinary community-based outreach rehabilitation program, and 56 were allocated to an information-only group. Rehabilitation was individualized, and patients were seen for 2 to 6 hours per week for an average of 27 weeks.

**Main Outcome Measures**
Scores on the Barthel Index (BI), the Brain Injury Community Rehabilitation Outcome-39 (BICRO-39), the Functional Independence/Assessment Measure (FIM+FAM), and the Hospital Anxiety and Depression Scale (HADS). An individually determined change score, the maximum gain index (MGI), was also calculated by identifying the subscale on which each patient showed the greatest improvement from intake to follow-up.

**Main Results**
Analysis was by intention to treat. On the BI, more patients in the outreach group (35%) showed improvement than did patients in the information-only group (20%) (Mann–Whitney U test on ranked changed scores, mean rank 53.2 vs 41.6, P < 0.05). Median change scores on the BICRO-39 were greater for those in the outreach group than for those in the information group for the total score, the MGI, and the self-organization and psychological well-being subscores (Table). The FIM+FAM and HADS scores showed similar improvements in both groups. However, the MGI for the FIM+FAM was greater for those in the outreach group than for those in the information-only group (mean rank 53.2 vs 40.4, P < 0.03).

**Conclusion**
In patients with severe traumatic brain injury, a multidisciplinary community-based outreach rehabilitation program improved social functioning.

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*See Glossary.

### Community outreach program vs information only in traumatic brain injury at a mean of 24.8 months†

<table>
<thead>
<tr>
<th>BICRO-39 scores (range)</th>
<th>Median change scores (range)</th>
<th>P value‡</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total score (0 = functioning well, 30 = not functioning well)</td>
<td>Outreach</td>
<td>2.5 (–1.7 to 6.2)</td>
</tr>
<tr>
<td>Maximum gain index (–5, 5)</td>
<td>Outreach</td>
<td>1.6 (0.2 to 2.6)</td>
</tr>
<tr>
<td>Self-organization (0 = no help, 5 = cannot do)</td>
<td>Outreach</td>
<td>0.4 (–2.8 to 2.2)</td>
</tr>
<tr>
<td>Psychological well-being (0 = symptoms never experienced, 5 = almost always)</td>
<td>Outreach</td>
<td>0.6 (–2.0 to 2.6)</td>
</tr>
</tbody>
</table>

†BICRO-39 = Brain Injury Community Rehabilitation Outcome-39.

‡Probability levels for group comparisons (Mann–Whitney U tests).

**Commentary**
In 1998, Chesnut and colleagues (1) published an evidence-based analysis of TBI rehabilitation. They were able to draw few positive conclusions about the efficacy of rehabilitation because of the dearth of available evidence. The important study by Powell and colleagues provides a welcome counterpoint because it supports the usefulness of available evidence. The take-home message is that functionally based rehabilitation approaches provide the best outcomes (4), but also shows what more needs to be done.

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The elements of the therapy may have a positive effect. This study contributes to the growing body of evidence suggesting that multifaceted rehabilitation approaches provide the best outcomes (4), but also shows what more needs to be done.

The take-home message is that functionally based rehabilitation approaches provide the best outcomes (4), but also shows what more needs to be done.

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**References**