Employment after Traumatic Brain Injury (TBI): A cohort comparison study

Julie Phillips, Occupational Therapist
University of Nottingham/Nottingham Traumatic Brain Injury Service

Return to work after traumatic brain injury (TBI)

• Main goal after TBI (Carlson et al. 2006)
• Low rates of post injury employment: 41% in work at 1 year (Van Velzen 2009)
• Patchy UK provision (Deshpande et al. 2004)
• Is VR targeted at returning people with TBI to work effective in UK?
• Is it cost effective?

Aim of feasibility study

• Was a specialist TBI service (including occupational therapy (OT) aimed at return to work/education), more effective at getting people back to work/education, than routine care?
• Was a specialist service cost effective compared to routine care?
• Can we describe the OTVR delivered?

Inclusion Criteria

• Over 16 years old
• Had a documented TBI requiring an inpatient stay ≥ 48 hours
• Were in or intending to be in paid or voluntary work or education at the time of the injury
• Able to give informed consent

Method

Compared 2 groups of TBI patients

Specialist service = Nottingham Traumatic Brain Injury Service
Minor TBI = OT only
Routine care = Patients outside the catchment area

Recruitment = 4 weeks post hospital discharge
Postal Follow up 3, 6 and 12 months post recruitment

Specialist Group

• Nottingham Traumatic Brain Injury service:
  - 2 wte case managers, 1 wte Cognitive behavioural therapist, 0.6 wte O.T, 0.5 wte psychologist, 1 wte administrator.
  - Clients = GCS ≤ 12 (moderate/severe TBI)
  - Approx 40 new clients per year
  - Average team case load = 75 patients
• Minor TBI clients not eligible for service. For study were offered voc rehab by OT
Vocational Rehab Approach
Based on best practice guidelines (Tyerman A & Meehan M 2004).

Team:
- Address work issues
- Advise not to go back early

OT Role:
- Assessment
- Treatment
- Liaise with employers, tutors, DEA’s
- Advise and carry out monitored graded return to work programmes

Outcome measures
Primary
- Return to work/education: yes/no

Secondary
- Functional Ability (BICRO)
- Mood (HADS)
- Quality of Life (EQ5D)

Recruitment (22 months)
- 382 potential people identified
- 252 Non-eligible people
- 130 eligible
- 36 (27.4%) declined
- 94 in study

94 Participants

<table>
<thead>
<tr>
<th></th>
<th>Specialist (n=40)</th>
<th>Usual care group (n=54)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td>32 (80%)</td>
<td>45 (83%)</td>
</tr>
<tr>
<td>Mean age (range)</td>
<td>35 years (18-66)</td>
<td>34 years (16-68)</td>
</tr>
<tr>
<td>In work/education</td>
<td>38 (95%)</td>
<td>53 (96%)</td>
</tr>
<tr>
<td>Mean GCS (3-15)</td>
<td>9.4</td>
<td>10.3</td>
</tr>
<tr>
<td>Mod/severe TBI (GCS 3-12)</td>
<td>26 (65%)</td>
<td>28 (52%)</td>
</tr>
<tr>
<td>Minor TBI (GCS 3-15)</td>
<td>14 (35%)</td>
<td>26 (48%)</td>
</tr>
</tbody>
</table>

Baseline difference – length of hospital stay
- Specialist group in hospital for 11 days less
  Specialist group = mean 12 days (sd 20)*
  Usual care group = mean 23 days (sd 21)*

- Specialist group = 3x more likely to report receiving adequate care at 4 weeks post hospital discharge

*Using 5% trimmed mean

Return to work – all participants

- 12% at work
- 15% difference

- Time since injury: Pre-injury, 4 weeks, 3 months, 6 months, 12 months

- Intervention group
- Non intervention
12 months post hospital discharge: Secondary outcomes

- Between groups
  - No significant difference in function, mood or quality of life
- Between people working or not working
  - Those in work had significantly less anxiety, less depression and reported a higher quality of life

Costs – over 1 year (UK£2007)

- Specialist group only cost £75 more per person in Health and social
- Specialist group £1,862 better off than usual care group in social costs
- Cost an extra £502 per person to return a person to work in the specialist group
- 13% more usual care participants were living on only benefits at one year

Content analysis

- Designed a proforma*
- Recorded OT treatment on patients who received 2 or more sessions of OT in 10 min units

Proforma Categories

- Cognitive/Executive skills
- Work preparation
- Return to work process
- Miscellaneous
- Liaison
- General issues
Content of treatment

- 66% of the OT intervention directly focused on RTW:
  - Work preparation (23%)
  - Assessment (15%)
  - RTW process (13%)
  - Current issues (15%)

- No intervention on PADL

Top 5 work concessions

- Graded return to work = 88% participants
- Flexible extra breaks (18%)
- Decreased hours (18%)
- Reduced duties (15%)
- Reduced days (15%)
- Flexible start/finish times (13%)

Outcome of Treatment

- At discharge 25/29 (86%) = work/study
- Of these:
  - 22/29 (76%) returned to previous employer/college in some capacity
  - 3/29 (10%) had started a new job
  - 4/29 (14%) were not working (2 disengaged)
- Everyone remained in work for 18 months

Style of Intervention

- 66% of the OT intervention directly focused on RTW:
  - Work preparation (23%)
  - Assessment (15%)
  - RTW process (13%)
  - Current issues (15%)

- No intervention on PADL

Top 5 work concessions

- Graded return to work = 88% participants
- Flexible extra breaks (18%)
- Decreased hours (18%)
- Reduced duties (15%)
- Reduced days (15%)
- Flexible start/finish times (13%)

Outcome of Treatment

- At discharge 25/29 (86%) = work/study
- Of these:
  - 22/29 (76%) returned to previous employer/college in some capacity
  - 3/29 (10%) had started a new job
  - 4/29 (14%) were not working (2 disengaged)
- Everyone remained in work for 18 months

Conclusions

Clinical:
- Intervention group had increased work rates at all time points
- People with moderate and severe TBI showed largest 12 month difference in RTW rates
- Early intervention required

Cost-effectiveness
- Uncertain if health perspective taken at 1 year

Research
- Results suggest a larger study is warranted
Steering group

- Dr Kate Radford, University of Central Lancashire, Principal Investigator
- Dr Avril Drummond, University of Nottingham
- Dr Marion Walker, University of Nottingham
- Dr Tracey Sach, University of East Anglia
- Dr Andy Tyerman, Consultant Clinical Neuro-psychologist
- Dr Naseer Haboubi, Consultant in Rehabilitation Medicine
- Trevor Jones, patient representative

Thank you

References


Thank you

- Participants
- College of Occupational Therapy
- University of Nottingham
- Nottingham Traumatic Brain Injury Service (Nottingham University Hospitals)

Julie Phillips, Occupational Therapist
Nottingham Traumatic Brain Injury Service
Nottingham University Hospitals
Mobility Centre, City Hospital Campus
Hucknall Road
Nottingham
NG5 1PJ
0115 969 1169 Ext 55150
julie.phillips@nuh.nhs.uk