Effectiveness of Case Management in Treating Substance Abusers
Selected Results from a Metaanalysis

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Other Authors

Case management is a widely implemented intervention in health care, social welfare and criminal justice settings

Long tradition among MHC-populations:
  • Coordinate fragmented service provision  
  • Continuity of care for chronic disorders  
  • Reduce costs of institutionalisation

Confliciting results from systematic reviews
  • Reduced rehospitalisation rates  
  • Personal functioning ?

Background
Background

- Persons with alcohol and other drug use disorders (AOD) frequently have additional problems in functioning—social, physical, psychiatric, housing, and many others
- Many persons also have difficulty accessing and staying involved in community services they need, including drug abuse treatment
- One strategy for responding to these needs is case management

Objective of the Metaanalysis

- Conduct a systematic review of randomized clinical trials that tested the effectiveness of case management in improving outcomes
- Case Management compared to:
  - Standard of Care (treatment as usual)
  - Other Active Interventions
    - e.g., Motivational Interviewing
Randomized, controlled trial
- Intervention was called “case management” and implemented at least 4 of 5 case management functions — assessment, planning, linking, monitoring, advocacy
- All study participants were substance abusers
- At least one outcome measure associated with case management

Twenty-one (21) studies met eligibility criteria

Study Eligibility Criteria

Objective of Today’s Talk

- Report on the effectiveness of case management in improving two groups of outcomes:
  - Treatment Related Tasks
  - Personal Functioning (Alcohol and Other Drug)
Treatment Tasks: Case managers assist clients in their relationship with services (substance abuse, mental health, employment); help them link, monitor their progress, advocate for their needs.

Personal Functioning: Case managers directly help clients improve their functioning; reduce drug use, improve mental health, get jobs, avoid legal problems.

Outcomes Differentiated As...

Substance Abuse Treatment and Other Social & Health Care Services

- Waiting
- Linkage
- Engagement
- Retention
- Completion
- Satisfaction
Personal Functioning

- Alcohol use
- Drug use
- Mental health
- Social support
- Legal
- Family
- Living situation
- Income
- Readiness to change
- High risk behaviors
- Quality of life
- Stressful events
- Domestic violence
- Physical health

Observations about Case Management

- Case management functions are almost universally associated with Treatment Related Tasks, although descriptions are only general
- Almost no descriptions of how case management impacts Personal Functioning
• **Question #1**: Is case management as effective in improving Personal Functioning, specifically AOD use, as it is in improving Treatment Related Tasks?

• **Question #2**: If case management is as effective in improving Personal Functioning, what is the mechanism of action? How does it work?

**Included Studies**

• Eight of the 21 eligible studies:
  ◦ Compared case management to standard of care
  ◦ Expressed TRT and PF outcomes as dichotomous or proportional
  ◦ Effects logically understood as Odds Ratios
  ◦ Results from longest follow-up period in the study
<table>
<thead>
<tr>
<th>Study</th>
<th>Outcomes</th>
<th>Study Rationale for Effect on PF</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Treatment Tasks</strong></td>
<td><strong>Personal Functioning</strong></td>
<td></td>
</tr>
<tr>
<td>Coviello, 2006</td>
<td>Linkage</td>
<td>AOD (2)</td>
</tr>
<tr>
<td>Braucht, 1995</td>
<td>Linkage</td>
<td></td>
</tr>
<tr>
<td>Jansson, 2005</td>
<td>Engagement</td>
<td>AOD (5)</td>
</tr>
<tr>
<td>Morgenstern 2006</td>
<td>Linkage</td>
<td>Engagement Retention Completion</td>
</tr>
<tr>
<td>Rapp, 2008</td>
<td>Linkage (3)</td>
<td></td>
</tr>
<tr>
<td>Scott, 2002</td>
<td>Linkage</td>
<td></td>
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<tr>
<td>Sorensen, 2005 (Barnett, 2006)</td>
<td>Linkage</td>
<td>AOD (1)</td>
</tr>
<tr>
<td>Zanis, 1996</td>
<td>Linkage</td>
<td></td>
</tr>
</tbody>
</table>

**Treatment Related Tasks**
- Linkage with Primary Treatment
  - Mixed modalities
  - Residential
  - Methadone
  - Outpatient
- Primary Treatment
  - Engagement
  - Retention
  - Completion

**Personal Functioning (Alcohol & Other Drug)**
- No alcohol use in preceding 30 days (self-report)
- No heroin/cocaine use in preceding 30 days (self-report)
- Negative urines for cocaine/opiates

**Outcomes - Included Studies**
### Figure 1. Odds Ratios and Forest Plot for Treatment Related Tasks

<table>
<thead>
<tr>
<th>Study or Subgroup</th>
<th>Case Management</th>
<th>Standard of Care</th>
<th>Odds Ratio</th>
<th>Odds Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Events Total</td>
<td>Events Total</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.1.4 Treatment Tasks</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jannsson 2006</td>
<td>11 22 21 24</td>
<td></td>
<td>0.62 [0.21, 1.93]</td>
<td></td>
</tr>
<tr>
<td>Rasp 2009</td>
<td>24 40 26 39</td>
<td></td>
<td>0.69 [0.37, 1.38]</td>
<td></td>
</tr>
<tr>
<td>Strang 1985</td>
<td>143 163 129 163</td>
<td></td>
<td>0.80 [0.56, 1.19]</td>
<td></td>
</tr>
<tr>
<td>Sten 2002</td>
<td>271 344 267 344</td>
<td></td>
<td>1.15 [0.79, 1.66]</td>
<td></td>
</tr>
<tr>
<td>Risp 2008</td>
<td>122 222 89 239</td>
<td></td>
<td>1.93 [1.33, 2.81]</td>
<td></td>
</tr>
<tr>
<td>Molinero 2005</td>
<td>104 156 60 135</td>
<td></td>
<td>1.97 [1.23, 3.17]</td>
<td></td>
</tr>
<tr>
<td>Rasp 2009</td>
<td>41 73 30 77</td>
<td></td>
<td>2.01 [1.06, 3.85]</td>
<td></td>
</tr>
<tr>
<td>Molinero 2006</td>
<td>68 106 31 135</td>
<td></td>
<td>2.59 [1.96, 4.32]</td>
<td></td>
</tr>
<tr>
<td>Molinero 2008</td>
<td>59 156 46 135</td>
<td></td>
<td>2.95 [1.92, 4.74]</td>
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<tr>
<td>Blondsen 2005</td>
<td>14 29 6 29</td>
<td></td>
<td>3.42 [1.57, 10.92]</td>
<td></td>
</tr>
<tr>
<td>Conte 2006</td>
<td>21 73 4 49</td>
<td></td>
<td>4.54 [1.45, 14.22]</td>
<td></td>
</tr>
<tr>
<td>Zani 1996</td>
<td>17 37 1 14</td>
<td></td>
<td>11.10 [2.53, 49.38]</td>
<td></td>
</tr>
</tbody>
</table>

Subtotal 95% CI: 1617 1519 1.94 [1.43, 2.63]

Total events: 753

Heterogeneity: Tau² = 0.18, Chi² = 36.47, df = 12, P = 0.0003, I² = 67%
Test for overall effect Z = 4.27 (P = 0.0001)

### Figure 2. Odds Ratios and Forest Plot for Personal Functioning (AOD)

<table>
<thead>
<tr>
<th>Study or Subgroup</th>
<th>Case Management</th>
<th>Standard of Care</th>
<th>Odds Ratio</th>
<th>Odds Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Events Total</td>
<td>Events Total</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.1.2 AOD Functioning</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jannsson 2005</td>
<td>11 15 21 25</td>
<td></td>
<td>0.52 [0.11, 2.51]</td>
<td></td>
</tr>
<tr>
<td>Sten 2005</td>
<td>17 29 10 26</td>
<td></td>
<td>0.75 [0.17, 3.25]</td>
<td></td>
</tr>
<tr>
<td>Jannsson 2005</td>
<td>16 22 30 34</td>
<td></td>
<td>0.84 [0.17, 4.20]</td>
<td></td>
</tr>
<tr>
<td>Jannsson 2005</td>
<td>16 22 30 34</td>
<td></td>
<td>0.93 [0.30, 5.30]</td>
<td></td>
</tr>
<tr>
<td>Jannsson 2005</td>
<td>20 22 30 34</td>
<td></td>
<td>1.72 [0.30, 9.73]</td>
<td></td>
</tr>
<tr>
<td>Conte 2006</td>
<td>32 73 11 48</td>
<td></td>
<td>2.70 [1.19, 6.08]</td>
<td></td>
</tr>
<tr>
<td>Conte 2006</td>
<td>44 73 12 48</td>
<td></td>
<td>2.95 [1.35, 6.34]</td>
<td></td>
</tr>
<tr>
<td>Jannsson 2005</td>
<td>16 15 21 25</td>
<td></td>
<td>3.49 [0.33, 12.92]</td>
<td></td>
</tr>
</tbody>
</table>

Subtotal 95% CI: 271 270 1.66 [1.02, 2.69]

Total events: 176

Heterogeneity: Tau² = 0.19, Chi² = 8.78, df = 7 (P = 0.27), I² = 39%
Test for overall effect Z = 2.64 (P = 0.004)

Total (95% CI): 271 270 1.66 [1.02, 2.69]

Total events: 176

Heterogeneity: Tau² = 0.19, Chi² = 8.78, df = 7 (P = 0.27), I² = 39%
Test for overall effect Z = 2.64 (P = 0.004)
Test for subgroups differences: Not applicable.
Figure 3. Odds Ratios and Forest Plots for TRT and PF (AOD)

Figure 4. Funnel Plot for TRT and PF
Results - Question #1

- Is case management as effective in improving personal functioning as it is in improving treatment related tasks?
  - Yes . . . Maybe
  - Odds ratios for Treatment Related Tasks are not significantly larger than those for Personal Functioning (Alcohol & Drug Use)

Results - Question #2

- If case management is as effective in improving personal functioning, what is the mechanism of action, i.e. how does it work?
  - We know very little about mechanism of action, at least in present articles.
Improving Treatment Related Tasks and Personal Functioning is a great deal to expect from a single, “non-therapeutic” intervention

No matter how adaptable it is

But, it may be possible to

- Train case managers in some techniques—motivational interviewing—they can use to improve Personal Functioning, while helping clients address Treatment Related Tasks

**Discussion**

**Limitations**

- Studies included in analysis
  - Continuous outcomes may provide different results
  - Small sample sizes in some studies, especially those with Personal Functioning outcomes
- Only looked at AOD outcomes, not other Personal Functioning
- Vague, or non-existing descriptions of case management
- Vague descriptions of methodology
Conclusions

- Case management may help with Personal Functioning, just as it consistently does with Treatment Related Tasks
- But we don’t know how or why (mechanism of action)
- Need better description of the activities involved in case management and how those activities are supposed to benefit substance abusers