The Effects of Patient Support on Treatment Adherence and Treatment Outcome

Susan van den Hof
Liverpool, 28 Oct 2016
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Background

Reasons for incomplete treatment adherence

- Long treatment duration
- Quick improvement of symptoms early in treatment
- Adverse drug reactions
- Financial burden
- Stigma

- Social support interventions (SSI) are being provided by several TB programs to remove or alleviate barriers to treatment adherence
- There is uncertainty about the contribution of SSI on treatment adherence and treatment outcomes
Systematic literature review

- To identify SSI provided to (MDR) TB patients
- To assess the effects of these SSI on treatment adherence and treatment outcomes
Methods: interventions and outcomes

Two categories of SSI:

• **Psycho-emotional (PE) support**: emotional support through psychological interventions;
• **Socio-economic (SE) support**: tangible support through interventions delivering services, material goods, financial assistance

Outcome measures:

• **Treatment adherence**
• **Treatment outcomes**
• **Financial burden** → hardly any data available
Methods: Literature review

- Medline/Pubmed and Embase: Jan 1 1990 – Feb 28 2014
- Abstract book of World Conferences of Lung Health (2010-3)

- Language restricted to English, German, French, Portugese, Russian, Spanish

- Eligibility criteria
  - (MDR) TB patients
  - Ambulatory care
  - Description of intervention
  - Assessment on adherence, treatment outcomes or financial burden
  - Comparison of an intervention group and no support group
Number of identified studies

- 1752 abstracts
- 25 studies described
- 21 studies in meta-analysis
SSI studies

- **11 Randomized Clinical Trials**
- **14 Non-Randomized Studies**
  - 3 in LIC
  - 16 in MIC
  - 6 in HIC
  - Most data from Brazil, China, Russia, South Africa and Senegal

- **11 SE support**
- **7 PE support**
- **7 SE & PE support**

- **46 to 4,091 participants per study**
Effects SSI on treatment success

PE, SE and PE&SE support led to higher treatment success
Effects SSI on unsuccessful treatment outcomes

PE, SE and PE&SE support led to less unsuccessful outcomes
Effects SSI on treatment adherence

• Three RCTs assessed the effect of PE and/or SE on treatment adherence

• PE in Mexico (self-help groups):
  • significant improvement (RR 1.20; CI 1.03–1.39)

• SE in USA (subway tokens):
  • no significant improvement (RR 1.11; CI 0.92–1.33)

• SE in Timor-Leste (nutritional support):
  • no significant improvement (RR 1.01; CI .0.85–1.21)
WHO systematic review: Social support interventions
## Material support:
(food, financial incentive or transport/living subsidy)

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Study design</th>
<th>Number of studies</th>
<th>RR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Success</td>
<td>RCT</td>
<td>3</td>
<td>1.07 (1.03 - 1.11)</td>
</tr>
<tr>
<td>Success</td>
<td>Observational</td>
<td>4</td>
<td>1.25 (1.09 – 1.42)</td>
</tr>
<tr>
<td>Mortality</td>
<td>Observational</td>
<td>3</td>
<td>0.51 (0.37 – 0.71)</td>
</tr>
<tr>
<td>Failure</td>
<td>RCT</td>
<td>1</td>
<td>0.66 (0.50 – 0.87)</td>
</tr>
<tr>
<td>Loss to follow up</td>
<td>RCT</td>
<td>1</td>
<td>0.74 (0.60 – 0.90)</td>
</tr>
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**Higher** rate of treatment success and sputum conversion  
**Lower** rate of mortality, treatment failure, and loss to follow up in patients with material support interventions
### Patient education and counseling

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Study design</th>
<th>Number of studies</th>
<th>RR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Success</td>
<td>RCT</td>
<td>2</td>
<td>1.40 (0.09 - 2.17)</td>
</tr>
<tr>
<td>Completion</td>
<td>RCT</td>
<td>1</td>
<td>1.71 (1.32 – 2.22)</td>
</tr>
<tr>
<td>Cure</td>
<td>RCT</td>
<td>1</td>
<td>2.15 (1.58 – 2.92)</td>
</tr>
<tr>
<td>Adherence</td>
<td>RCT</td>
<td>1</td>
<td>1.83 (1.14 – 2.92)</td>
</tr>
<tr>
<td>Loss to follow up</td>
<td>RCT</td>
<td>1</td>
<td>0.49 (0.21 – 1.17)</td>
</tr>
</tbody>
</table>

**Higher** rates of treatment success, completion, cure and adherence in patients provided with patient education & counseling
Psychological support

<table>
<thead>
<tr>
<th>Outcome</th>
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<th>Number of studies</th>
<th>RR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Success</td>
<td>RCT</td>
<td>1</td>
<td>1.09 (0.96 - 1.23)</td>
</tr>
<tr>
<td>Completion</td>
<td>RCT</td>
<td>1</td>
<td>1.20 (1.03 – 1.39)</td>
</tr>
<tr>
<td>Completion</td>
<td>Observational</td>
<td>1</td>
<td>1.47 (1.08 – 2.00)</td>
</tr>
<tr>
<td>Failure</td>
<td>RCT</td>
<td>1</td>
<td>Risk difference -0.12 (-0.22, – 0.01)</td>
</tr>
<tr>
<td>Loss to follow up</td>
<td>Observational</td>
<td>1</td>
<td>0.31 (0.15 – 0.63)</td>
</tr>
<tr>
<td>Loss to follow up</td>
<td>RCT</td>
<td>1</td>
<td>0.49 (0.21 – 1.17)</td>
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Higher rate of treatment completion; Lower rate of treatment failure and loss to follow up with psychological support.
Discussion and conclusion

- Psycho-emotional and/or socio-economic support interventions improve treatment outcomes
- Little evidence on effects on treatment adherence and financial burden
- Most support included multifaceted types of interventions, so no conclusions can be drawn on the effect of individual interventions
  - But multifaceted types of interventions may be needed
- Well-designed studies would provide more certainty on the effects of different PE and SE interventions
- More systematic data collection by TB programs to monitor implementation and evaluate effects also needed
- Reports should include information on costs and sustainability to provide information on efficiency and scalability
Thank you!

Acknowledgments

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