Abstract

Cognitive challenges are often identified as one of the significant barriers to successfully engaging teens in treatment. Failure to engage may be due in part to difficulty paying attention, lack of perspective-taking, and inadequate analytic skills. **Aim:** In order to assess thinking patterns among teens, 9 scales were created. The purpose of the study is to report preliminary psychometric data on each scale. **Method:** Data represent 558 adolescents admitted to 8 residential substance abuse treatment sites across the US. The assessment package includes items on restrictive thinking (negative urgency, positive urgency, invincibility) and adaptive thinking (attention, premeditation, confidence in problem solving, confidence in resisting drug use, assertiveness, optimism/hope). Results: Rasch modeling indicated reliability in terms of discrimination and difficulty. Descriptive results are reported by gender, age, and drug use severity. **Conclusion:** The TCU General Thinking Scales promise as a useful tool for assessing cognitive challenges among adolescents in substance abuse treatment.

Aims

The purpose of this study is to report preliminary data on the reliability of general thinking scales for adolescents.

- Do subscales on the general thinking forms for adolescents have reasonable reliability?
- What are the range of scores for adolescents in this sample?
- How do scores differ across groups of clients (e.g., gender, age, drug use severity)?

TCU Thinking Scales

The TCU General Thinking Scales are theoretically grounded in research on adolescent judgment and decision making.

- **Restrictive Thinking**
  - Negative Urgency
  - Positive Urgency
  - Invincibility

- **Adaptive Thinking**
  - Attention
  - Premeditation
  - Confidence in Problem Solving
  - Confidence in Resisting Drug Use
  - Assertiveness
  - Optimism and Hope

<table>
<thead>
<tr>
<th>Scale</th>
<th>Items</th>
<th>Coef α</th>
<th>IRT Reliability</th>
<th>Difficulty Range</th>
<th>Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Restrictive Thinking</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Negative Urgency</td>
<td>6</td>
<td>.83</td>
<td>.81</td>
<td>.65 to .54</td>
<td>31.32</td>
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<tr>
<td>Positive Urgency</td>
<td>6</td>
<td>.81</td>
<td>.78</td>
<td>.22 to .42</td>
<td>26.60</td>
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<tr>
<td>Invincibility</td>
<td>6</td>
<td>.72</td>
<td>.72</td>
<td>.21 to .25</td>
<td>30.18</td>
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<tr>
<td>Adaptive Thinking</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attention</td>
<td>5</td>
<td>.72</td>
<td>.72</td>
<td>.45 to .46</td>
<td>31.01</td>
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<tr>
<td>Premeditation</td>
<td>6</td>
<td>.85</td>
<td>.84</td>
<td>.10 to .21</td>
<td>30.54</td>
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<td>.90</td>
<td>.86</td>
<td>.77 to .59</td>
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<td>.41 to .57</td>
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<td>.44 to .48</td>
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<tr>
<td>Optimism and Hope</td>
<td>5</td>
<td>.59</td>
<td>.59</td>
<td>.33 to .45</td>
<td>31.41</td>
</tr>
</tbody>
</table>

Results

Psychometric Analyses

- Coefficient alphas and IRT reliability scores indicate good fit, with adequate range in difficulty ratings.
- The IRT Mean Square Fit statistics for each item was generally close to 1.0.

One exception: “I am confident that I can walk away from a fight” (difficulty = 1.62). Item removal did not yield a change in reliability for the Confidence in Problem Solving scale and the item was therefore retained.

Restrictive Thinking Scale Means by Group

- Females and teens with high drug severity report a greater tendency to act without thinking when angry or feeling rejected (negative urgency).
- High drug severity teens report a greater tendency to act rashly under positive affect (positive urgency) and perceive greater invincibility than the low drug severity clients.

Adaptive Thinking Scale Means by Group

- Females report more confidence in their ability to resist drug use than males.
- High severity clients report lower attention and premeditation, less confidence in problem solving, less confidence in resisting drug use, and less optimism and hope for the future.

Discussion

The TCU General Thinking Scales show promise as a useful tool for assessing restrictive and adaptive thinking among adolescents in substance abuse treatment. Clients appear to be responding appropriately to questions, scales appear to be reliable, and there is variability in responses across individuals. **Limitations:** Generalizability is limited because data are restricted to 8 residential programs in 3 states. Outpatient, juvenile justice-based, and hospital-based programs were not sampled. **Future Considerations:** The notable differences in drug use severity across the thinking scales warrant further analysis, considering the potential moderating effects of drug use frequency, trauma, and family support.