Social Participation And Navigation (SPAN): Usability testing of an app-based coaching intervention for teenagers with TBI

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Background & Rationale

- Teens with traumatic and other acquired brain injuries (TBI/ABI) often experience social participation restrictions in school and community activities.
- Lack of evidence on programs to promote social participation of teenagers with TBI/ABI.
- Evidence that peer mentors/coaches can help youth work on goals and solve problems, and provide them with emotional support.
- Teens frequently use smart phones and apps in their everyday lives.
- Social Participation And Navigation (SPAN) was designed to address social participation needs of teenagers with TBI/ABI and was informed by our prior work and those that have influenced us.

Objectives

1. To describe the initial SPAN prototype.
2. To report on 4-week usability trial with initial prototype.
3. To discuss recommendations for SPAN use in current 10-week implementation trial.

Sample, Procedures & Methods

- 4 teens (3 females, 1 male), Ages 15-17.5 (mean=15.75) years old, injured 4-11 (mean 8.5) years earlier; initial injury ranged from severe to complicated mild.
- 4 coaches (2 female graduate students in Occupational Therapy; 2 male graduate students in Speech Pathology / Neuroscience).

SPAN CONTENT & PROCEDURES

- iPhone app to support goal setting and implementation of planned steps and strategies to accomplish goals.
- Key Tips and Brief Tips in app with information and strategies to support social participation:
  - Social participation, problem solving, self monitoring, self control, staying positive, joining conversations.
- 4 weekly coaching sessions via Skype (~45 minutes).
- Coach session notes written & reviewed in supervision.
- Coach training and weekly supervision (online; in-person as needed).

METHODS

- Type and number of goals achieved and action plans recorded (teenagers).
- Usability surveys designed for study (teenagers, parents and college student coaches).
- Pre- and post-test measures (teenagers and parents):
  - Social Competence Scales of the Child Behavior Checklist (CBCL) and Youth Self Report (YSR).
  - Quality of Communication Life Scale modified for adolescents.

Changes from Pre- to Post-testing

<table>
<thead>
<tr>
<th>Measures</th>
<th>Pre-test Mean (SD)</th>
<th>Post-test Mean (SD)</th>
<th>Effect size (Cohen's d)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Competence (Teen - YSR)</td>
<td>48.25 (9.91)</td>
<td>52.50 (4.12)</td>
<td>0.56</td>
</tr>
<tr>
<td>Social Problems (Teen - YSR)</td>
<td>55.25 (4.65)</td>
<td>52.00 (2.00)</td>
<td>0.91</td>
</tr>
<tr>
<td>Total Problems (Teen - YSR)</td>
<td>48.25 (5.56)</td>
<td>42.75 (3.77)</td>
<td>1.16</td>
</tr>
<tr>
<td>Quality of Communication Life (QCL; Teen)</td>
<td>4.07 (0.57)</td>
<td>4.41 (0.53)</td>
<td>0.62</td>
</tr>
<tr>
<td>Social Competence (Parent - CBCL)</td>
<td>56.00 (8.87)</td>
<td>57.00 (14.70)</td>
<td>0.08</td>
</tr>
<tr>
<td>Social Problems (Parent - CBCL)</td>
<td>56.25 (9.32)</td>
<td>58.00 (13.47)</td>
<td>0.15</td>
</tr>
<tr>
<td>Total Problems (Parent - CBCL)</td>
<td>47.00 (10.80)</td>
<td>46.50 (14.93)</td>
<td>0.04</td>
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</tbody>
</table>

Results

<table>
<thead>
<tr>
<th>SPAN Usability</th>
<th>1 (not); 2 (somewhat); 3 (helpful); 4 (very); 5 (extremely)</th>
</tr>
</thead>
<tbody>
<tr>
<td>App</td>
<td>Parent</td>
</tr>
</tbody>
</table>

Additional Feedback

- **BENEFITS**
  - SPAN prototype feasible to implement
  - Most participants satisfied with key features
  - Liked coaching for building rapport and troubleshooting around issues (coach & teen)
  - Step by step goal-setting process leads to real-life outcomes
  - Valuable experience for both parties

- **CHALLENGES**
  - Some difficulty scheduling Skype sessions
  - Key topics too long, used jargon & not so enjoyable to read
  - Confusion about difference between ‘steps’ and ‘strategies’
  - Some initial navigation challenges; limited in-app directions
  - Not possible to share app while chatting
  - No push notifications (reminders about steps and timelines)
  - Difficult to know how to manage parental involvement (coaches)
  - What counts as a “social participation” goal? (team)

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References