Identifying and Comparing Profiles of Treatment Need for Youth in School-Based and Community-Based Programs at a Large Mental Health Agency

March 5th, 2018
Sarah Accomazzo, Jesh Harbaugh, Leticia Galyean, Ana Plasencia
Non-profit service provider reaching over 8,000 unique clients and families annually in CA and WA

Continuum of school-based, community-based, crisis, placement, and residential programs

~1,300 staff

How do we best support Seneca staff to use data to answer questions, solve problems, and make decisions?
TODAY: EXPLORE SEVERITY OF NEED AT TIME OF ENTRY

Describe method

Share results:
At entry to community-based or school-based programs:
1. Which individual assessment items are associated with significantly higher overall need?
2. Which combination of assessment items is significantly associated with a higher or lower overall need?
3. How do school-based and community-based profiles of need compare?

Discuss implications and next steps
METHOD
Clients who entered services between 7/2015 – 6/2017

Ages 1-18

**School-Based Sample: 624 Clients**
- 50% Counseling Enriched Classroom, 43% NPS, 7% Wraparound

**Community-Based Sample: 673 Clients**
- 72% Wraparound, 18% MST, 10% BIS
CHILD AND ADOLESCENT NEEDS AND STRENGTHS ASSESSMENT (CANS)

- In use in all 50 states, 38 states use state-wide
- Free ($10 / person training cost)
- Flexible and customizable
- A “Transformational Collaborative Outcomes Management” (TCOM) tool
- Evidence of reliability (inter-rater) and validity (face, content, construct)

Lyons, 2009; Rosenbalm et al., 2016
Total Actionable Items (TAI) Score

- CANS: Scored on a 0-3 scale
- 2s and 3s (Actionable); 1s and 0s (Non-Actionable)

TAI = Count of all actionable non-extension module items on a client’s initial CANS assessment.

Seneca: ~ 100 core CANS items, differs by program
ANALYSES

- Recursive partitioning random forests and regression trees (e.g. Cordell et al., 2016; Strobl, et. al, 2009).
  - Analytic approach for handling “big data”
  - Handles large amounts of highly correlated variables, no prior assumptions, non-parametric
  - Maximizes predictive accuracy with decision-tree approach

- Software: Rstudio, randomForest and rpart packages
  - We adapted code based on Dr. Katharan Cordell’s 2016 TCOM presentation- thank you!
RESULTS
YOUTH NEED

**School-Based Programs**
- **Mean TAI:** 14.73
- **SD:** 7.08
- **Range:** 1-43
- **Median:** 14

**Community-Based Programs**
- **Mean TAI:** 20.72
- **SD:** 8.23
- **Range:** 0-46
- **Median:** 20

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**School TAI Core Domains**

**CBS TAI Core Domains**
QUESTION 1

AT ENTRY, WHICH INDIVIDUAL ASSESSMENT ITEMS ARE ASSOCIATED WITH SIGNIFICANTLY HIGHER NEED?
### School-Based Programs

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<thead>
<tr>
<th>Actionable CANS Item</th>
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<tr>
<td>Community Life (Strength)</td>
</tr>
<tr>
<td>Coping and Savoring Skills (Strength)</td>
</tr>
<tr>
<td>Social Functioning (Need)</td>
</tr>
<tr>
<td>Interpersonal (Strength)</td>
</tr>
<tr>
<td>Optimism (Strength)</td>
</tr>
<tr>
<td>Family Functioning (Need)</td>
</tr>
<tr>
<td>Decision Making (Need)</td>
</tr>
<tr>
<td>Trauma Hyper Arousal (Need)</td>
</tr>
<tr>
<td>Oppositional Behavior (Need)</td>
</tr>
</tbody>
</table>

### Community-Based Programs

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<th>Actionable CANS Item</th>
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</thead>
<tbody>
<tr>
<td>Decision Making (Need)</td>
</tr>
<tr>
<td>Living Situation (Need)</td>
</tr>
<tr>
<td>Family Functioning (Need)</td>
</tr>
<tr>
<td>Recreational (Need)</td>
</tr>
<tr>
<td>Optimism (Strength)</td>
</tr>
<tr>
<td>Community Life (Strength)</td>
</tr>
<tr>
<td>Caregiver Supervision (Need)</td>
</tr>
<tr>
<td>Family (Strength)</td>
</tr>
<tr>
<td>Social Functioning (Need)</td>
</tr>
</tbody>
</table>

*Note: the top 20 items from each were used in the following recursive partitioning analyses.*
QUESTION 2

AT ENTRY, WHICH COMBINATIONS OF ASSESSMENT ITEMS ARE ASSOCIATED WITH A SIGNIFICANTLY HIGHER OR LOWER NEED?
SCHOOL-BASED PROGRAMS: REGRESSION TREE

Lack of Coping & Savoring Skills

- Life Funct. Domain - Recreational
  - scom = N, U
    - dfmat = N, U
      - scom = N
        - dfmat = N, U
          - dfmat = N, U

- Life Funct. Domain - Living Situation
  - ldfam = N
    - ldfam = N
      - esdm = N, U
        - cnkno = N

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SCHOOL BASED SAMPLE

n=624
100%, TAI: 15

Recreational Functioning Need

NOT 82%, TAI: 13
Lack of Coping Savoring Skills

ACT: 18%, TAI: 22
Living Situation Need

ACT: 5%, TAI: 28
Caregiver Knowledge Need

NOT: 12%, TAI: 19
Decision-Making Need

NOT: 3%, TAI: 24

ACT: 2%, TAI: 33

NOT: 45%, TAI: 11
Lack of Community Connection

ACT: 37%, TAI: 16
Family Functioning Need

NOT: 22%, TAI: 9
dfmfmat

ACT: 24%, TAI: 13
Lack of Family Support

Key:
% of overall sample, mean TAI
Not Actionable Actionable
COMMUNITY-BASED PROGRAMS: REGRESSION TREE

Life Function Domain - Living Situation

1. Life Function Domain - Decision Making
   - 16 (n=310 46%)
   - 17 (n=202 42%)

2. Life Function Domain - Decision Making
   - 18 (n=213 43%)
   - 19 (n=81 12%)

3. Life Function Domain - Decision Making
   - 20 (n=114 17%)
   - 21 (n=673 100%)

   - Yes: idjud = N,U

4. Life Function Domain - Decision Making
   - 22 (n=363 54%)
   - 23 (n=249 37%)

   - No: idfam = N

5. Life Function Domain - Decision Making
   - 24 (n=112 17%)
   - 25 (n=57 8%)

   - Yes: scom = N

6. Life Function Domain - Decision Making
   - 26 (n=69 10%)
   - 27 (n=80 13%)

   - No: srel = N

7. Life Function Domain - Decision Making
   - 28 (n=48 7%)
   - 29 (n=45 7%)

   - Yes: cnsup = N

8. Life Function Domain - Decision Making
   - 30 (n=41 6%)
   - 31 (n=46 7%)

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COMMUNITY BASED SAMPLE

n=673
100%, TAI: 21

Decision Making Need

NOT 46%, TAI: 16
Living Situation Need

ACT: 54%, TAI: 25
Family Functioning Need

NOT: 17%, TAI: 20
Lack of Optimism

ACT: 37%, TAI: 27

NOT: 22%, TAI: 9
Family Functioning Need

ACT: 10%, TAI: 19

Not Actionable Actionable

Key:
% of overall sample, mean TAI
QUESTION 3

How do school-based and community-based profiles of need compare?
## SCHOOL-BASED PROGRAMS

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<thead>
<tr>
<th>Profile ID</th>
<th>Life Funct. Domain - Recreational</th>
<th>Ind. Strengths - Coping &amp; Savoring Skills</th>
<th>Life Funct. Domain - Living Situation</th>
<th>Average TAI (Core Domain Items, Initial)</th>
<th># of Clients in Sample</th>
<th>% of Clients</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Actionable</td>
<td>Actionable</td>
<td>Actionable</td>
<td>28.9</td>
<td>27</td>
<td>4.3 %</td>
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<tr>
<td>2</td>
<td>Actionable</td>
<td>Not</td>
<td>Actionable</td>
<td>23.1</td>
<td>7</td>
<td>1.1 %</td>
</tr>
<tr>
<td>5</td>
<td>Not</td>
<td>Actionable</td>
<td>Actionable</td>
<td>22.2</td>
<td>33</td>
<td>5.3 %</td>
</tr>
<tr>
<td>3</td>
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<td>Actionable</td>
<td>Not</td>
<td>20.4</td>
<td>50</td>
<td>8.0 %</td>
</tr>
<tr>
<td>4</td>
<td>Actionable</td>
<td>Not</td>
<td>Not</td>
<td>16.4</td>
<td>26</td>
<td>4.2 %</td>
</tr>
<tr>
<td>7</td>
<td>Not</td>
<td>Actionable</td>
<td>Not</td>
<td>15.1</td>
<td>199</td>
<td>31.9 %</td>
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<tr>
<td>6</td>
<td>Not</td>
<td>Not</td>
<td>Actionable</td>
<td>13.4</td>
<td>14</td>
<td>2.2 %</td>
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<tr>
<td>8</td>
<td>Not</td>
<td>Not</td>
<td>Not</td>
<td>10.8</td>
<td>268</td>
<td>42.9 %</td>
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<tr>
<td><strong>Total</strong></td>
<td></td>
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<td><strong>14.7</strong></td>
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<td>28.6</td>
<td>147</td>
<td>21.8 %</td>
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<td>8</td>
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# How Do School and Community Profiles Compare?

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IMPLICATIONS AND DISCUSSION
As we constructed our datasets, we encountered several **decision points** that impact the analyses and results:

- Full agency vs. specific program models

**TAI calculation**

- Include extension module items?

**Include extension module items as variables in the random forest analysis** even if we don’t include extension items in the TAI?

- When creating profiles, we coded blank/missing item scores as “Not” Actionable. (Coded separately for other analyses)
TAKE-AWAYS & TOPICS OF INTEREST… AND WE WANT TO HEAR FROM YOU!

Take-Aways:

- Community-based youth have higher overall need, and different profiles of need, compared to school-based youth
- Is TAI a useful way to measure severity of need?
- Data decisions impact results

Next Steps:

- Exploring practical applications at Seneca
- Does change in item score on individual items predict change in overall need?
- Analyze other outcomes with recursive partitioning
- Automating these analyses using R and Power BI together
Questions? Comments?
Please reach out, we’d love to hear from you!

Sarah Accomazzo, MSW, PhD (sarah_accomazzo@senecacenter.org)
Jesh Harbaugh (jesh_harbaugh@senecacenter.org)
REFERENCES


- Rosenbalm et. al, 2016