Using Multi-level Modeling to Better Understand Improvements and Predictors in Wilderness Therapy

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Second Nature Wilderness Programs
Research Questions

• What predicts adolescent improvements?
• Does change last after OBH treatment?
• Are there predictors for lasting change?
Methods

- **Enrollment:**
  - June 2011–June 2012
  - N=659, Participation rate was 85%
  - Four wilderness therapy programs

- **Data collection:**
  - 4x during treatment
  - 6 & 18 months post-treatment

- **Measures:** Youth Outcome Questionnaire (parent and self-report)

- **Analysis:** Multi-level Model to assess trajectories of change and identify predictors
Why Multi-level Models?

- OBH data and longitudinal data is clustered in groups and related to each other.
- Traditional regression methods assume that observations are independent and can lead to an overstatement of statistical significance.
- MLMs better account for missing data
Participants

- Average age = 16.3 years
- Gender: 29% Female, 71% Male
- Parents living together = 65%
- Adopted = 18%
- Average length of stay = 10.4 weeks
Presenting Issues

Mood, 68%
Substance, 64%
Anxiety, 54%
Behavior, 69%
Attachment, 4%
General Results

- Participants entered with high levels of dysfunction and made significant improvements during treatment.

- Clinically & statistically significant change on parent and self-report, and discharged within the “normal” range of functioning.

- At 6 and 18 months post-treatment, clients remained in the normal range of functioning.
In-Treatment Change

- **Predictors of greater dysfunction at intake (YOQ-SR)**
  - Mood Disorders***
  - Anxiety or Behavioral disorder*
  - Parents living together*
  - High parent dysfunction score*

- **Predictors of greater rate of change during treatment**
  - Gender**
  - Parent discharge*
Post-Treatment Change

○ Predictors of healthier functioning post-discharge
  ○ Parent-reported change from intake to discharge during OBH treatment***

○ Factors associated with parent change (intake – discharge)
  ○ Higher parent intake scores***
  ○ Attachment diagnosis (negative relationship)***
  ○ Higher youth-reported change intake to discharge*
  ○ Substance-related* or Anxiety diagnosis*
Post-Treatment Change Trajectories.

- Low parent change, High youth change
- Low parent change, Low youth change
- High parent change, High youth change
- High parent change, Low youth change

YOQ2.01 Score vs. Months Post OBH Treatment
Limitations

• No control or comparison group.

• Post-discharge sample for adolescents was too small to model variation in rate of change following treatment.

• The four programs were connected by management and have traditional wilderness therapy models, therefore generalization to all OBH is limited.
Discussion

- Adolescents make significant improvements during treatment and maintain progress afterward.
- Females appear to gain more from wilderness than boys, though they represent less than 1/3 of the population.
- Presenting issue does not appear to have a significant impact for youth-change during treatment.
- Parent perception appears to have a great impact in outcome.