

Research Questions – Overview

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Thoughts from Len:

- A. Data – does quarterly feedback have any effect on anything – compare all outcome/mediating/etc measures on slope before the first quarterly feedback to slope before next quarterly feedback and do the same for each subsequent quarterly feedback with sufficient sample size. If no then that is an important finding and we can call that condition the no feedback condition (with explanation) since it was always meant to have no effect and was given as a compromise. The issue would be do we have to include covariates and subgroups?
- B. Are there data cleaning decisions to make about any discarding of data because they are outliers. E.g. sites who do not have much data; extremely long stay clients – suggestion about creating more than one data set since we might want to drop sites for site level analyses but still include data in individual client or counselor level analyses.

1. Main Study Questions: Outcomes (reduction in symptoms)

COVARIATES: New vs old client; program type; cohort;

Intent To Treat analysis includes aims 1.1 to 1.3

- 1.1. Does providing frequent feedback on client-based process and outcome variables to clinicians improve the home-based mental health treatment of youth? That is, are youth in the weekly feedback condition more likely to show a stronger negative rate of change in symptoms as measured by the youth and counselor SFSS and less likely to show an increase in symptoms compared to the 3-months feedback condition (intent to treat main effect of feedback)? **ITT design**

Hypothesis: The frequent feedback group will show more significant improvement in symptoms compared to the 3-months feedback group.

- 1.2. Does providing training on common factors to clinicians and their supervisors improve the home-based mental health treatment of youth? That is, are youth in the common factor training condition more likely to show a stronger negative rate of change in symptoms as measured by the youth and counselor SFSS and less likely to show an increase in symptoms compared to the no training condition (intent to treat main effect of training)? **ITT design**

Hypothesis: The common factor training group will show more significant improvement and less significant increase in symptoms compared to the no-training group.

- 1.3. Does providing training on common factors in addition to frequent feedback enhance the effect of feedback? That is, are youth in the combined common factor training condition and weekly feedback condition more likely to show a stronger negative rate of change in symptoms

as measured by the youth and counselor SFSS and less likely to show an increase in symptoms compared to the other 3 conditions (intent to treat interaction effect of feedback and training)?

ITT design

Hypothesis: The combined group will show more significant improvement and less significant increase in symptoms compared to the other three groups.

Ideally, these previous three questions should this be tested simultaneously accounting for the 2x2 factorial design

Analytical Plan for aims 1.1 to 1.3 is available in: [CFITAnalysisplan_BS_112509.pdf](#)

Additional follow-up analysis:

ITT analysis will be repeated using the first 90 day time frame per client. This analysis will be done separately for weekly and the 90-day (Qrtly) group and repeated for three respondents: youth, clinician and caregiver SFSS.

Hypothesis: “The best FB effect should happen within the first 90 days in CFIT.”

Implementation Analysis includes aims 1.4 to 1.6

- 1.4. Does total **number of feedback reports accessed by** clinicians improve the home-based mental health treatment of youth? That is, are youth in the weekly feedback condition for which the counselor regularly reviewed available reports more likely to show a stronger negative rate of change in symptoms as measured by the youth, caregiver, and counselor SFSS and less likely to show an increase in symptoms compared to those who are 3-months feedback condition and those for whom the counselor did not regularly review the reports (main effect of feedback with adherence taken into account)?

Hypothesis: Dose response: The more feedback reports accessed the more improvement in symptoms compared to others.

Aim 1.4 will be done in two steps:

- 1) Using total number of FB reports viewed per client as a client fixed effect.
- 2) Using number of FB reports viewed at each time at client level. This number of FB reports will increase as clinicians viewed more FB reports over time per each client. This moving covariate will differ by client.

- 1.5. Does participating in training on common factors to clinicians and their supervisors improve the home-based mental health treatment of youth? That is, are youth in the common factor

training condition whose counselors actively participated in the training (NEED TO DEFINE) more likely to show a stronger negative rate of change in symptoms as measured by the youth and counselor SFSS and less likely to show an increase in symptoms compared to the no training condition and those who did not actively participate (main effect of training with adherence taken into account)?

Hypothesis: The group whose counselors actively participated in training will show more significant improvement and less significant increase in symptoms compared to the others. same dose-response analysis as above

Aim 1.5 will be done in two steps:
<p>1) Using total number of training common factors clinicians accessed as a clinician fixed effect.</p> <p>2) Using number of training modules clinicians read at each time. This number would increase as clinicians accessed more modules over time (ranging from 0-3). This moving covariate will differ by clinician. For instance if clinicians read the 1st module at wk20, read the 2nd module at Wk23 and 3rd at Wk 35. The Modules Access time moving covariate will be "0" in weeks W1-W19, equal to "1" in Wks 20-22, "2" at Wk23-34, and equal to "3" at Wk35 and over.</p>

1.6. Does the participation in training on common factors in addition to reviewing frequent feedback enhance the effect of feedback? That is, are youth in the combined common factor training condition and weekly feedback condition whose counselors showed good adherence more likely to show a stronger negative rate of change in symptoms as measured by the youth and counselor SFSS and less likely to show an increase in symptoms compared to the other 3 conditions and those with low adherence (interaction effect of feedback and training with adherence taken into account)?

Hypothesis: The combined group of counselors with good adherence will show more significant improvement and less significant increase in symptoms compared to the others. same dose response analysis as above

2. Possible variability in change patterns

The proposed covariates, new/old client and program type, may not only influence the level and the rate of change but also the pattern of change in severity (SFSS). According to some sources, treatment progress is expected to follow a logarithmic curve: a lot of improvement early on and then it levels of. Thus, the effect of feedback is likely to be different for clients who started CFIT late relative to their treatment start date. In addition, for youth in foster care, the service provider

considers it a success when the kids remain stable, that is, they show a rather flat pattern of change. Youth in the virtual resident program may experience a lot of change because of the high severity they start treatment with and the intensity of the treatment. If these different patterns are found, is it appropriate to use the same statistical model for all of them?

In addition, the comparative effect of weekly feedback should be the strongest during the first three months during which the comparison group does not receive any feedback at all.

- 2.1. Is there a detectable difference in the pattern of change in regard to new/old client?
- 2.2. Is there a detectable difference in the pattern of change in regard to program type?
- 2.3. Is there a detectable stronger effect of feedback during the first three months of CFIT?

3. Other outcomes: Life Satisfaction and Hopefulness

We have two other outcome variable representing the strength-based approach. It is likely that these two variables are less volatile and change at a slower pace and are collected less frequently. If there are significant changes over time, it would be interesting to determine how they related to our main outcome variable, the SFSS. Also, it would be interesting to explore if the study conditions have a significant effect on these strength-based outcomes.

Comment [LB1]: Would use the same ITT analysis as used in SFSS

- 3.1. Is there a meaningful change in youth life satisfaction over the course of treatment?
- 3.2. Is there a meaningful change in youth hopefulness over the course of treatment?
- 3.3. How are changes in symptoms and functioning (SFSS) over time related to changes in youth life satisfaction?
- 3.4. How are changes in symptoms and functioning (SFSS) over time related to changes in youth hopefulness?
- 3.5. How are youth life satisfaction and hopefulness related to each other over time?
- 3.6. Is there any significant effect of the study conditions on life satisfaction?
- 3.7. Is there any significant effect of the study conditions on hopefulness?

4. Mechanisms of change: Clinicians - Feedback - Outcome (functioning only)

Our theory is that by providing clinician with feedback about issues in their treatment (outcomes and process), they are aware of these issues and are motivated to address those issues during sessions following the feedback. By having awareness of the issues and by, in turn, addressing them, they will have less unintentional interruptions of treatment and, thus, better outcomes of treatment overall.

- 4.1. Are SFSS item alerts on a feedback report related to reports of clinicians addressing this issue in subsequent sessions as reported on the session report form? [We need to decide what matches there are between SFSS items and items on the session report form]

Comment [LB2]: We already have a table that related SRF items to SFSS items. We did not do it with other measures of outcome. We also control for whether the clinician has discussed that topic in previous sessions to control for this being new information. Also suggest a survival analysis – how long (time, sessions) for the clinician to indicate they discussed it 1. In feedback vs. no feedback 2. In read vs. not read.

- 4.2. Are sudden changes in scores (outcomes or process variables) related to reports of clinicians addressing this issue in subsequent sessions as reported on the session report form? [We need to decide what matches there are between scales scores and items on the session report form]
- 4.3. Are reports from clinician that they addressed an issue related to changes on the respective scale representing the issue?

How to operationalize this analysis? We will use information from SFSS - FB alerts: read or not and SRF: whether the clinician discuss it or not and see if the viewed/discussed combination affect functioning outcomes. We will revise and refine what we have done in the past.

First we will not take into account what topic was discussed or which alarm.

Then a more refined analysis will be for specific alarms, specific topic discussed relevant to that alarm and specific items on the SFSS that are relevant to the alarm. This analysis is a little tricky since alarm items will have a higher value than non-alarm items and will show a reduction just because of regression to the mean. This is why the discuss variable is so important in comparing the same alarm with discuss and not discuss.

5. Mechanisms of change: Therapy process

There is a debate in the clinical literature to what degree common factors and therapy process variables really matter. The current empirical literature is insufficient to answer these questions. With our unique longitudinal dataset we have the opportunity and responsibility to investigate some important issue in regard to the nature of therapy process variables and their relationship to clinical outcomes over time. It was our assumption that process variables predict outcomes and that we can influence process variables through interventions (i.e., feedback and training).

- 5.1. How does TA behave over time? What is the pattern of change?
- 5.2. What does really matter in regard to the relationship of TA to outcomes (SFSS)? Is the level, the rate of change, a sudden drop (rupture), agreement of raters (clinician and youth), or synchronicity (divergence and convergence over time)?
- 5.3. Does providing frequent feedback on TA have a measurable impact on TA? Does accessing the reports with TA matter (not ITT)
- 5.4. How does motivation behave over time? Is there a growth factor over time? Are there sudden changes?
- 5.5. In what way is motivation related to outcomes (SFSS)? Is motivation to be in treatment going up when the youth severity increases (problem recognition)? Are those youth who are motivated to be in treatment more likely to take advantage of treatment (change subscale on the counseling impact scale) and, thus, more likely to improve their outcomes?
- 5.6. Is a sudden drop in TA (rupture) related to subsequent changes in treatment motivation?
- 5.7. To what degree does motivation at intake matter compared to motivation once treatment started?

- 5.8. Does providing frequent feedback on motivation have a measurable impact on motivation?
- 5.9. How does session impact change over time? Is there a growth factor or are changes from session to session more common?
- 5.10. How is session impact related to outcomes? Are those youth who are improving in regard to outcomes more likely to perceive an impact of counseling compared to those who are not improving? Does a positive perception of impact have an effect on changes in outcomes?
- 5.11. Is session impact related to treatment motivation? That is, are those youth who perceive a positive impact also more motivated to be in treatment compared to those who perceive less of an impact?
- 5.12. Does providing feedback on session impact have a measurable effect on session impact?
- 5.13. Are realistic treatment expectations [needs to be operationalized] related to early developments in TA?

6. Mechanism of change: Caregivers

Caregivers are seen as an important factor in the mental health treatment of youth both in regard to how their well-being is related to the youth mental well-being and in regard to their participation in treatment.

- 6.1. Is the caregiver's life satisfaction related to the youth progress in treatment? That is, are youths, whose caregivers are not doing well, less likely to improve? Is it a moderator?
- 6.2. Is the youth mental health status (primarily externalizing behaviors) related to the experience of caregiver strain? And, is caregiver strain related to caregiver life satisfaction? (Note by Len: This is less important)
- 6.3. Does the caregiver's life satisfaction increase as the youth mental health status improves over the course of treatment?
- 6.4. Is the caregiver's motivation to be in treatment related to the youth's outcomes?
- 6.5. Is the quality of the caregiver's relationship with the counselor (TA) relevant in regard to treatment outcomes?

7. The influence of clinicians

Clinicians are the main agents of change in our theory of change. By providing them with additional information about their clients (feedback) and with information about what they can do to do better (training) we believe that we can influence their behavior in the treatment with youth. However, not all clinician are the same and the effectiveness of an intervention often differs by characteristics of the target group (in this case the clinicians).

- 7.1. Is there a significant clinician effect in the model? That is, is there a significant and meaningful ICC if clinician is included at a level in the MLM?

- 7.2. Can we identify different patterns/profiles among clinicians in regard to their treatment success (cluster analysis)?
- 7.3. Are these profiles related to certain clinician characteristics such as years of experience, age, level of training, or their supervisor)?
- 7.4. Are these profiles related to CFIT implementation?
- 7.5. Are these profiles related to the effectiveness of CFIT (as mediators or moderators)?

8. Implementation

We have great variety in regard to implementation of CFIT both at the office (site) level and the clinician level. There are also different patterns of change. Some gradually improve while others vary quite a bit over time, and others decline in their implementation level. For the future success it is important to understand what individual level and context factors predict the level of implementation and the pattern of change over time. Because we have a variety of quantitative and qualitative data on this topic, this would be a great area for a mixed-method approach.

- 8.1. What counselor characteristics (demographics, attitudes, motivation, etc.) are related to implementation?
- 8.2. What supervisor characteristics (demographics, attitudes, motivation, etc.) are related to implementation?
- 8.3. What organizational (site level) characteristics (size, type of service, org culture and climate, etc.) are related to implementation?
- 8.4. What kinds of intervention seem to work best in improving implementation?
- 8.5. What are the most important factors that affect implementation that we can use to:
 - 8.5.1. Determine eligibility (readiness)
 - 8.5.2. Determine if these factors are modifiable
 - 8.5.3. We should monitor during operations to predict implementation problems – are there reliable predictors other than poor implementation

9. Organizational context and outcomes

Ultimately, CFIT is an organizational intervention as it attempts to change the way organizational learning is done. CFIT both depends on a supportive organizational environment and is intended to influence this environment. What can we learn from our data?

- 9.1. Are there different types of organizations in regard to clinician outcomes?
- 9.2. If so, what organizational characteristics are related to these different types of organizations?
- 9.3. Are there certain types of organizations for which CFIT works better? If so, what are the characteristics of these organizations?
- 9.4. How is the organizational culture and climate related to CFIT implementation? Can we identify the ideal culture and climate for making CFIT work?
- 9.5. Are there organizational characteristics that are predictive of outcomes?

9.6. Does CFIT change the organizational culture and climate?

9.7. Does CFIT support the development of a learning organization?

10. Basic Theory test

10.1. Are there sufficient data to test the theoretical model underlying clinician change that is the core of CFIT (e.g. cognitive dissonance etc