Statistical Analysis Plan

Title: Novel Methods for Implementing Measurement-Based Care for Youth in Low-resource Environments

NCT number: NCT05644756

Date of this analytic plan: 5/5/2025

Original analytic plan: Analyses will be the same for each fidelity outcome tool. We will use 3-level generalized mixed effects models to account for the multilevel nature of the data (fidelity score nested within therapist nested within clinic Significance of model fit and individual coefficients will be determined via deviation tests (likelihood ratio, Akaike Information Criterion, & Bayes Information Criterion).

Power. Assuming parameters outlined above, therapist intraclass correlations ranging from .01 to .30, and level-2 covariates correlating with outcomes at .15, we have power of .80 to detect a minimum effect size of d = .36 - .48

Data from each clinic will be collected and combined into a primary dataset after the 12th month of their involvement, or when enough therapists have completed entering their 5 training cases into the CBT+ dashboard. Data cleaning and primary analyses will begin once all data from all participating clinics are collected and compiled into one dataset. It is expected that analyses will take between 3 - 6 months after data are gathered from the final clinic to complete. The primary outcomes paper will be written between 4 months - 1 year after data are analyzed.

UPDATES: We deviated from the original analytic plan because were unable to recruit clinicians to track outcome data using the CBT+ toolkit. Instead, and as documented in the protocol, we sent providers a Qualtrics form asking them to self-report their caseload as well as the number of clients they reported using measurement-based care with. The updated analytic plan based upon this change is as follows: Descriptive statistics will be used to summarize fidelity to measurement-based care (MBC) at each of the three assessment time points. A repeated-measures analysis of variance (ANOVA) will be conducted to evaluate whether fidelity to key components of MBC changes over time—from baseline (defined as 6 months post-enrollment) to 3 months after the conclusion of active implementation, and again at 6 months post-implementation. No statistical corrections for multiple comparisons will be applied given the single statistical test being carried out. Statistical significance will be evaluated at the 0.05 level (two-tailed). To address missing data, a conservative **Last Observation Carried Forward (LOCF)** approach will be used, allowing participants with partial data to be retained in the analytic sample. Assumptions of normality and sphericity will be assessed. If the assumption of sphericity is violated, Greenhouse-Geisser corrections will be applied. Effect sizes (e.g., partial eta squared) will be reported to estimate the magnitude of observed effects. All analyses will be conducted using R v4.3.3 and Rstudio 2023.12.1].