Couples Health Project: Data Analysis Plan

Development of a couples-based intervention to reduce drug use and enhance sexual health among partnered emerging adults.

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Analytic plan

A series of bivariate analyses conducted using the generalized estimating equations function within SPSS (version 25) evaluated the success of randomization and the presence of differential attrition. In models evaluating randomization, condition (MI-intervention versus control) served as the sole predictor of baseline characteristics. Analogous models evaluating differential attrition predicted baseline characteristics from a dichotomous variable indicating whether or not a participant completed a specific follow-up.

Multi-level models calculated in Mplus (version 8.2; 48) evaluated primary hypothesized direct treatment effects. These models controlled for the nesting of participants within couples and permitted the specification of logistic and count (Poisson or negative-binomial) distributions as appropriate. Full-information maximum likelihood estimation was utilized to retain all cases in a true intent-to-treat paradigm. For each outcome, 3- and 6-month values were predicted by treatment condition.

The hypothesis that baseline frequency of drug use or CAS with casual partners may moderate the effects of treatment was evaluated using the Actor-Partner Interdependence Model (APIM) framework (49). Models incorporated participants' own baseline report of the outcome (actor scores) as well as their partners' report (partner scores) at Level 1. Interactions among actor and partner baseline scores and treatment condition were also included at Level 1. This included the 3-way interaction term as well as all possible 2-way interactions. A natural log transformation was used to address skew in these predictor variables. For models involving count-distributed outcomes, effect size was calculated using procedures outlined by Larsen and Merlo (50) for the calculation of an Interval Odds Ratio.