Project: TOGETHER – A Couple's Model to Enhance Relationships and Economic Stability

NCT: 04227405

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Data Analysis Plan

As a preliminary analysis, each of the outcome scales was summarized at pre, post, and follow-up assessments, using descriptive statistics (mean, standard deviation, scale reliability) for males and females in the whole sample, the treatment group, and the control group.

The main goal of the present RCT was to examine the effectiveness of the intervention. Intervention couples were expected to report significantly better outcomes than the control group upon completion of the workshop and further improvement or maintenance of such changes at the six-month follow-up. Multilevel models were used to test mean differences across time points within the treatment group and across spouses (a dyadic approach). Data were nested longitudinally within individuals, and then individuals were nested within couples. The non-independence of data longitudinally and within couples is accounted for in the multilevel models (Kenny, Cashy, & Cook, 2006).

All analyses were conducted in R (version 3.4.1; R Core Team, 2018). Between-group differences in change were estimated with a piecewise multilevel growth model using all three-time points. The piecewise growth model was specified where the first piece corresponded to the intervention period (pre-test to post-test) and the second piece corresponded to the post-intervention period (post-test to follow-up). We also tested between-group differences in change from baseline to follow-up (pre-test to follow-up). Because participants did not complete the post-intervention and follow-up surveys at the same time (i.e., participants completed the surveys within specific time windows), time was specified as the number of months between assessments and allowed to vary across participants.

The multilevel approach utilizes all data from each time point, retaining as much data as possible when attrition occurs. Analyses controlled for demographic variables that have been associated with relationships (for a review, see Karney & Bradbury, 2020) and financial outcomes (Xiao et al., 2015): Race (White = 1 vs. not), marital status (married = 1 vs. not), gender, age, highest level of education, income, length of relationship in years, number of children, and baseline measurement of the outcome variables. We controlled for baseline differences in the outcome measures in the piecewise multilevel growth model by constraining baseline treatment and group to equality (i.e., constrained longitudinal data analysis; Liang & Sieger, 2000). To facilitate the interpretation of results, we computed Cohen's *d* effect sizes (group mean difference divided by the pooled within-group standard error) and confidence intervals (CI) for all effects. The Benjamini-Hochberg method (1995) was used for adjusting *p* values for multiple comparisons as recommended by What Works Clearinghouse for controlling the false discovery rate for studies that have multiple outcome variables.

We used multilevel generalized mixed models for attrition analyses where the outcome variable was a binary indicator of missing. Covariates were demographic variables and baseline measures of outcome measures. As in the main analyses, random effects were included to account for the nesting of individuals within couples. Attrition analyses examined if there were significant differences in demographic and outcome variables between all participants that stayed in the study in comparison with those that dropped out. Differential attrition analysis examined if there were significant differences in demographic and outcome variables between the control group's attrition and the intervention group's. Nonetheless, we accounted by any attrition differences by

including demographic variables as covariates and controlling for baseline measures of the outcomes in all of the analyses.

Relatedly, we assessed baseline equivalence across groups for demographics and outcome variables not only in the entire sample (at initial randomization) but also in the analytic sample (retained at follow-up) to evaluate attrition effects. We controlled for baseline differences in demographic and outcome variables in all analyses.

References

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