Statistical analysis

All analyses will be performed in R, version 4.2.3 (R Core Team, 2023). Descriptive statistics will be computed using the SummaryTools package to describe the characteristics of the study participants. McDonald's omega and Cronbach's alpha will be calculated using the MBESS package to assess the internal consistency of all primary and secondary measures.

In this study, missing data will be addressed by using the forward imputation method with the ForImp (Barbiero, Ferrari & Manzi, 2015) package. The forward imputation method provides a way to complete the dataset and allows inclusion of all available participants, mitigating potential biases associated with missing data.

Reliable change index (RCI) and clinically significant change index (CSCI) will be calculated to determine the participants' proportion that reliably changed and recovered. The RCI will be computed to assess whether individual participants' changes in scores are statistically significant and unlikely to have occurred by chance or measurement error alone. The CSCI will be computed to determine whether the change in scores is clinically meaningful. The LogisticRCI and the Clinfun packages will be used. In addition, pre-post effect sizes will be calculated using Hedges g. The effsize package will be used.

The effect of the task will be evaluated and controlled in each session. Multivariate latent change score models will be employed to analyze change trends in primary and secondary outcomes between conditions, implemented through the lavaan package (Rossel, 2012). Where appropriate, 95% confidence intervals will be estimated.

Intervention satisfaction/usefulness will be evaluated through thematic analysis of participants' responses to the Final Session and Process Questionnaires.

References

Barbiero, A., Ferrari, P., & Manzi, G. (2015). Imputation of Missing Values Through a Forward Imputation Algorithm. R package version 1.0.3. https://CRAN.R-project.org/package=ForImpV

Rosseel, Y. (2012). lavaan: An R Package for Structural Equation Modeling. *Journal of Statistical Software, 48(2)*, 1-36. https://doi.org/10.18637/jss.v048.i02