Archives of Scientific Psychology Reporting Questionnaire for Manuscripts Describing Primary Data Collections

JARS: ALL: These questions should be answered for ***all*** submitted manuscripts

MANUSCRIPT SECTION	Description
TITLE An Abbreviated Impulsiveness Scale (ABIS) Constructed through Confirmatory Factor Analysis of the BIS-11	Does the Title identify the variables and theoretical issues under investigation, as well as the relationship between them? Yes ■ No ☐ If no, please explain:
AUTHOR NOTE For a review of what should be included in the Author Note, see the *Publication Manual of the American Psychological Association*: http://www.apastyle.org/manual/ Christopher G. Coutlee, Cary S. Politzer, Rick H. Hoyle, and Scott A. Huettel Department of Psychology and Neuroscience, Duke University, Durham, North Carolina, 27710 This research was supported by NIH Grants DA023026 (Hoyle) and NS041328 (Huettel) Correspondence to: Scott A. Huettel, Center for Cognitive Neuroscience, Box 90999, Duke University, Durham, NC 27710. Email: scott.huettel@duke.edu; Phone: 919.681.9527 The authors report no conflicts of interest.	Does the Author Note contain acknowledgment of special circumstances, for example: • use of data also appearing in previous publications, dissertations, conference papers? Yes■ No☐ If no, please explain:

	• sources of funding or other support? Yes ☒ No☐ If no, please explain: • relationships that may be perceived as conflicts of interest? Yes☒ No ☐ If no, please explain:

SCIENTIFIC ABSTRACT	Does the Scientific Abstract describe:
Impulsiveness is a personality construct characterized by the urge to act spontaneously and without reflecting on consequences. It is commonly measured using the Barratt Impulsiveness Scale version 11 (BIS-11), which has remained a prevalent scale despite inconsistent replication of its original factor structure. Here, we applied exploratory factor analysis (EFA) to data from a large adult sample (N = 1549) and confirmatory factor analysis (CFA) to data from two replication samples (N = 657; N = 285) to re-examine the factor structure of impulsiveness as measured by the BIS-11. We sought to improve scale efficiency, score reliability, and inferential validity by eliminating questionable items and factors. Factors reflecting need for cognition (three items) and domain-specific financial impulsiveness (three items) were removed to increase scale specificity. Three poorly measured factors reflecting restlessness (two items), perseverance (two items) and cognitive instability (2 items), and five items poorly explained by the remaining factors (R2 from .02-.26) were also removed. From this final model, we derived the ABbreviated Impulsiveness Scale (ABIS). The ABIS measures attentional (five items, = .72), non-planning (four items, = .75), and motor (four items, = .75) impulsiveness. Model fit for the ABIS was superior to fit for the canonical BIS-11 in every sample tested. Additionally, the ABIS predicted alcohol consumption in a separate study of impulsive behavior (r = .44, p < .05). By removing unreliable items and factors, we produced an efficient, internally consistent, and generalizable scale measuring attentional, motor, and non-planning impulsiveness.	• the problem under investigation? Yes ■ No ☐ If no, please explain: • participants or subjects, specifying pertinent characteristics; in animal research, including genus and species? Yes ■ No ☐ If no, please explain:

- study method, including:
  - sample size?
    Yes ☒ No ☐
  - any apparatus used?
    Yes ☒ No ☐
  - measures?
    Yes ☒ No ☐
  - data-gathering procedures?
    Yes ☒ No ☐
  - research design (e.g., experiment, observational study)?
    Yes ☒ No ☐

If answered "no" for any of the study methods above, please explain:

- findings, including effect sizes and confidence intervals and/or statistical significance levels?

  Yes ☒ No ☐

If no, please explain:

See JARS_SEM for details.

- conclusions and the implications or applications?
  Yes ☒ No ☐

  If no, please explain:

INTRODUCTION For the Introduction please indicate whether the requested information can be found in this section of the manuscript, in a supplemental file, or whether the information is not relevant to the study. If the information is not relevant, please provide a brief explanation.	Does the Introduction: • describe the importance of the problem? In manuscript ■ In supplemental files ☐ Not relevant ☐ If not relevant, please explain: • describe theoretical or practical implications of the problem? In manuscript ■ In supplemental files ☐ Not relevant ☐ If not relevant, please explain:

- review relevant scholarship in relation to previous work?

  In manuscript ☒ In supplemental files ☐ Not relevant ☐

  If not relevant, please explain:

- review if other aspects of this study have been reported upon previously and how the current report differs from these earlier reports?

  In manuscript ☒ In supplemental files ☐ Not relevant ☐

  If not relevant, please explain:

- describe the specific hypotheses or objectives, such as
    - theories or other means to derive hypotheses, if hypotheses were offered?

In manuscript ◪ In supplemental files ☐ Not relevant ☐

If not relevant, please explain:

- primary hypotheses?

In manuscript ◪ In supplemental files ☐ Not relevant ☐

If not relevant, please explain:

	○ secondary hypotheses? In manuscript ☒ In supplemental files ☐ Not relevant ☐ If not relevant, please explain: ○ planned exploratory analyses? In manuscript ☒ In supplemental files ☐ Not relevant ☐ If not relevant, please explain:

- describe how hypotheses and research design relate to one another?

  In manuscript ☒ In supplemental files ☐ Not relevant ☐

  If not relevant, please explain:

METHOD

For the Method section, please provide the information requested below, regardless of whether it also appears in the rest of the manuscript or in supplemental files.

Participant or subject characteristics:

- What were the eligibility and exclusion criteria for participants or subjects, including any restrictions based on demographic characteristics?

Sample 1: 18 Years or older, valid social security number.
Sample 2: 18 Years or older, valid social security number.
Sample 3: 18 Years or older.
Sample 4: 20 years or older, valid social security number, right handed, safe for magnetic resonance imaging studies (not pregnant, no surgically implanted metal, no current psychoactive or cardiovascular medications, no history of stroke, seizures, brain tumors, head trauma, no breathing disorders or heart conditions, no anemia, no claustrophobia).

- What were the major demographic characteristics of participants or subjects as well as important topic-specific characteristics, or, in the case of animal research, the genus and species?

---Sample 1 (n=1549):
-Gender: 940 female, 608 male, 1 unreported
-Race/Ethnicity: 812 Caucasian, 232 East Asian, 165 Black or African American, 184 Other/More than one, 105 Indian or South Asian, 50 Hispanic, 1 Unreported
-Student Status: 935 Undergraduate, 336 Not a student, 277 Graduate or professional student, 1 Unreported
-Age: 158 18, 242 19, 192 20, 242 21, 147 22, 169 23-24, 197 25-29, 84 30-35, 66 36-49, 47 50+, 5 Unreported

---Sample 2 (n=657):
-Gender: 377 female, 278 male, 2 unreported
-Race/Ethnicity: 339 Caucasian, 188 Asian, 89 Black or African American, 25 Other/More than one, 9 Hispanic, 7 Unreported
-Age: 141 18, 157 19, 97 20, 74 21, 69 22, 119 23+

---Sample 3 (n=285):
-Gender: 145 female, 140 male
-Race/Ethnicity: 234 Caucasian, 17 Asian, 16 Black or African American, 11 Hispanic, 7 Other/More than one
-Student Status: 43 Student, 236 Not a student, 4 Graduate or professional student, 2 Unreported
-Age: 40 18-21, 36 22-24, 57 25-29, 50 30-35, 59 36-49, 42 50+, 1 Unreported

---Sample 4 (n=49):
-Gender: 26 female, 23 male
-Race/Ethnicity: 39 Caucasian, 3 Asian, 6 African American, 1 Unreported
-Student Status: 19 Undergraduate, 14 Not a student, 16 Graduate or professional student
-Age: 1 20, 16 21, 7 22, 5 23-24, 16 25-29, 4 30-35

Sampling procedures:

- What procedures were used for selecting participants, including
    - the sampling method

Subjects self-selected into the study by responding to advertisements for the research project.

- the percentage of sample approached that participated

  N/A %

- any self-selection, either by individuals or by nomination from others?

See above.

- What were the settings and locations where data were collected?

Samples 1&2: Behavioral testing computer lab, Duke University.
Sample 3: Online using Amazon's Mechanical Turk.
Sample 4: Behavioral testing room at Duke University Medical Center.

- Were any agreements and payments made to participants?

Subjects were compensated an average of $10-$20/hour for participating in behavioral research studies, which included responding to personality questionnaires used in this study.

- Were IRB agreements obtained, ethical standards met, and safety monitored?
  Yes ☒ No ☐

  If no, please explain:

---------- ***Sample size, power and precision:*** The findings reported in the current study use data collected for other research purposes, so the sample sizes achieved were based on criteria independent of the measures and results obtained as a part of this study. No analyses using the measures included in this study were undertaken until after data collection for all four samples had been completed.	• What was the intended sample size? n = N/A • What was the actual sample size? n= sample 1:1549; sample 2:657; sample 3:285; sample 4:49 • How was sample size determined: ○ power analysis? Yes ☐ No ☒ ○ other methods used to determine accuracy of parameter estimates? Yes ☐ No ☒ If yes, describe: ○ stopping rules or interim analyses? Yes ☐ No ☒ If yes, describe: ----------

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Measures and covariates:

- Please provide the definitions of all primary and secondary measures and covariates taken in the study, including measures collected but not included in this report

Measure name:	Definition:
1. BIS-11	1. Self-report scale impulsivity score
2. Delay Discounting % Impatient Choice	2. % of choices of lower value but immediate choice in a delay discounting task
3. Alcoholic drinks consumed per week	3. Product of self-reported avg. # of alcohol drinking days/week and avg. # of drinks on a drinking day.

- What methods were used to collect data?

--Primarily self-report questionnaires.
--Delay Discounting - Proportion Impatient Choice: Delay discounting, or the tendency to devalue (discount) delayed rewards, is a common behavioral measure of impulsive decision making (Reynolds, Richards, Horn, & Karraker, 2004; Wittmann & Paulus, 2008). Participants from Sample 4 completed an experiment examining delay discounting in which they made 100 choices between two different options: a small monetary amount which could be received immediately, and a larger amount ($5-$50) which could be received after a delay (1-8 weeks). We used the proportion of choices for which the participant chose the impatient (smaller but immediate reward) option as an individual difference measure of impulsive decision making.

- Were methods used to enhance the quality of measurements?
  - training and reliability of data collectors?

Yes ☒ No ☐

  - use of multiple observations?

Yes ☐ No ☒

- What are the known psychometric and biometric properties of instruments used in the study?

Measure Name:	Property:	Result:
1. ABbreviated Impulsiveness Scale (ABIS) 2. Barratt Impulsiveness Scale version 11 (BIS-11) 3. Decision Making Styles Inventory Analytical and Intuitive scales 4. Need for Cognition and Faith in Intuition scales 5. BIS/BAS 6. UPPS impulsiveness scale 7. Brief Sensation Seeking Scale 8. Impulsive Sensation Seeking subscale	1. Three brief scales measuring attentional, motor, and nonplanning impulsiveness 2. 1/3/6 subscales measuring a variety of impulsiveness subtraits. 3. Two subscales measuring intuitive and analytical decision-making styles 4. Two subscales measuring need for cognition and faith in intuition. 5. One subscale measuring aversive motivation and three measuring appetitive motivation 6. Four subscales measuring urgent, premeditative, perseverant, and sensation-seeking impulsiveness 7. A brief measure of sensation seeking 8. A sensation-seeking subscale	1. Our study validates the ABIS as a brief, reliable measure of attentional, motor, and nonplanning impulsiveness. 2. Our study questions the sufficiency of the primary BIS-11 single, 3-factor, and 6-factor measures.

Research design:

- Were conditions manipulated ☐or naturalistic ☒?

If manipulated, please complete **JARS:EXP** *(see below)*

If manipulated, were subjects randomly assigned to conditions?
Yes ☐ No ☐

If randomly assigned, please complete **JARS: RCT** *(see below)*

If not randomly assigned, please complete **JARS:QED** *(see below)*

Miscellaneous:

- Are there any other aspects of the study's methods that are important for the interpretation or replication of its findings?

EFA and CFA methods: Latent factor models were implemented using the Mplus Version 6 (L. Muthén & Muthén, 2010). Response variables were treated as ordinal measures, and the model was estimated using WLSMV (B. Muthén, 1983). EFA was conducted using the exploratory structural equation modeling (ESEM)/EFA in the CFA framework, allowing for the estimation of standard errors associated with loadings, covariances, and other model parameters. An oblique geomin rotation was used. The number of factors to specify was determined through parallel analysis of the polychoric correlation matrix in order to account for the ordinal nature of the response variables. Parallel analysis was implemented in MATLAB R2011a (MathWorks, 2011) using procedures and scripts published by O'Connor (2000). Polychoric correlation matrices used as inputs were computed using FACTOR 8.1 (Lorenzo-Seva & Ferrando, 2006). For CFA, factor variances were fixed to 1.0 to achieve model identification, and factor covariances were freed. Model fit was evaluated using the comparative fit index (CFI, Bentler, 1990) and the root mean square error of approximation (RMSEA, Steiger, 1990). We used CFI values of .95 and RMSEA values of .06 as cutoffs for good model fit (Hu & Bentler, 1999). RMSEA cutoffs of .08 and .10 indicated acceptable and marginal fit, respectively (MacCallum, Browne, & Sugawara, 1996). To evaluate individual items, we considered the proportion of variation explained by the modeled latent factors, as indexed by the item R2 value. We used a cutoff of .30 for this measure, which can be interpreted as an estimate of the reliability of the item (Brown, 2006).

RESULTS

For the Results section, please provide the information requested in the questionnaire or provide the page number, table, or supplemental file in which the information can be found.

If your manuscript is accepted for publication, you will need to deposit your data set in an approved data repository. Please see Instructions to Authors for more information: www.apa.org/pubs/journals/arc

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Participant flow:

- How did participants move through each stage of the study and how many were lost at each stage, if any (use flow chart, if appropriate—*see Figure 1 below for an example*)?

Sample 1: Enrolled (n=1589); Excluded due to missing BIS-11 data (n=40); Final analyzed sample (n=1549)
Sample 2: Enrolled (n=729); Excluded due to missing BIS-11 data (n=72); Final analyzed sample (n=657)
Sample 3: Enrolled (n=303); Excluded due to missing BIS-11 data (n=18); Final analyzed sample (n=285)
Sample 4: Enrolled (n=49); Excluded due to missing BIS-11 data (n=0); Final analyzed sample (n=49)

Recruitment:

- Please provide the dates defining the periods of recruitment and repeated measures or follow-up.

Period	Start Date:	End Date:
Recruitment:	1. 3/19/2008	1. 7/14/2011
Sample 1:	2. 9/2010	2. 5/2013
Sample 2:	3. 2/2012 (online)	3. 2/2012 (online)
Sample 3:	4. 11/10/2009	4. 3/25/2010
Sample 4:		

Missing data:

- Did you experience problems concerning statistical assumptions and/or data distributions that could affect the validity of findings?

Yes ☐ No ☒

If yes, please describe:

Due to the nature of the primary responses of interest (self-report responses to BIS-11 four-choice scale items) we chose to use statistical methods which treated the nature of the data as ordinal, rather than assuming interval/continuous measurements.

- Missing data
  - Is missing data a cause of concern in this data set?
    Yes☐ No■
  - If missing data *was* a cause of concern, is there empirical evidence and/or theoretical arguments for the causes of data that are missing (e.g., missing completely at random (MCAR), missing at random (MAR), or missing not at random (MNAR))?

See JARS_SEM for details of non-problematic missing cases in SEM data samples.

  - If missing data *was* a cause of concern, is there empirical evidence and/or theoretical arguments for the causes of data that are missing (for example, missing completely at random (MCAR), missing at random (MAR), or missing not at random (MNAR))?

	• If missing data *was* a cause of concern, what methods, if any, were used for addressing missing data?
DISCUSSION ***----------*** ***Statistics and data analysis:***	***For the Discussion section, please indicate whether the requested information can be found in this section of the manuscript, in a supplemental file, or whether the information is not relevant to the study. If not relevant, please provide a brief explanation.*** • Did you experience problems concerning statistical assumptions and/or data distributions that could affect the validity of findings? Yes☐ No☒ If yes, please describe: See the JARS_SEM for details. Due to the nature of the primary responses of interest (self-report responses to BIS-11 four-choice scale items) we chose to use statistical methods which treated the nature of the data as ordinal (item factor analysis), rather than assuming interval/continuous measurements. • For inferential statistics (NHST), please indicate the a priori Type 1 error rate adopted: .05

- For each NHST conducted, regardless of whether significant results were obtained and regardless of whether or not reported in the text, please provide a log of the centrality (primary, secondary exploratory) of the analyses to the study's purpose, the analytic technique used, the direction, magnitude, degrees of freedom, and exact p-level associated with each test:

We used structural equation modeling (implemented specifically in the forms of exploratory and confirmatory factor analysis) as the main analysis technique for this study. Please see the JARS_SEM for details regarding our parameter estimation for SEM analyses. Raw estimation output from particular models is available upon request.

-Analyses in sample 1 (EFA and CFA): Centrality: primary; technique: SEM. We conducted exploratory analyses and parameter tests in sample 1 to build a model of the latent impulsiveness constructs represented with responses to the BIS-11 items. We used our judgement and the results of a variety of exploratory tests to guide our model-building at this phase of the study. The primary importance but exploratory nature of these analyses is justified by subsequent strictly confirmatory replication in independent samples.
-Analyses in sample 2 and 3 (CFA): Centrality: primary; technique: SEM. We confirmed the exploratory model from our tests in sample 1 using samples 2 and 3.

-Correlations between personality scales in samples 1-4 (correlation): Centrality: secondary, exploratory; technique: correlation. We computed correlations between the ABIS and BIS-11 subscales and between the ABIS and select additional personality measures to provide a context for understanding the nature of the hypothetical impulsiveness constructs measured by the ABIS through the nature of their relationships to other related measures. The overall scope of these tests assists interpretation of the ABIS scales.

- For multivariable analytic systems (e.g., multivariate analyses of variance, regression analyses, structural equation modeling analyses, and hierarchical linear modeling)
  - provide the associated variance-covariance (or correlation) matrix or matrices:

See SupplementalMaterials_JARS for variance/covariance matrices for all of our factor analysis samples.

  - describe any estimation problems (e.g., failure to converge, bad solution spaces), anomalous data points:

See JARS_SEM for details. In stage 1 of our analysis, a CFA based on the BIS-11 first-order (6-factor) model produced a Haywood case, in which the correlation between perseverance and self control factors > 1. We took this result as further evidence of the inadequacy of the original BIS-11 factor models.

None of the analyses utilizing the ABIS produced abnormal results or failures of model convergence.

  - identify the statistical software program, if specialized procedures were used:

mPlus Version 6 for EFA and CFA.
MATLAB version 11 was used for parallel analysis.
SAS 9.3 and Excel were used for all other statistical analyses.

- Is there a statement of support or nonsupport for all original hypotheses distinguished by primary and secondary hypotheses?

  In manuscript ■ In supplemental files ☐ Not relevant ☐

  If not relevant, please explain:

- Are post hoc explanations proposed?

  In manuscript ■ In supplemental files ☐ Not relevant ☐

  If not relevant, please explain:

  Explanations posed in the manuscript: The nature of the latent impulsiveness factors measured by the ABIS are interpreted in light of the patterns of association demonstrated in the exploratory correlational analyses relating the ABIS scales to a variety of other personality constructs measure in the study.

- Are the similarities and differences between these results and the work of others discussed?

  In manuscript ■ In supplemental files ☐ Not relevant ☐

If not relevant, please explain:

- Are results interpreted taking into account
  - sources of potential bias and other threats to internal validity?

    In manuscript ☒ In supplemental files ☐ Not relevant ☐

    If not relevant, please explain:

  - imprecision of measures?

    In manuscript ☒ In supplemental files ☐ Not relevant ☐

    If not relevant, please explain:

  - the overall number of tests or overlap among tests?

    In manuscript ☒ In supplemental files ☐ Not relevant ☐

    If not relevant, please explain:

- other limitations or weaknesses of the study?

In manuscript ■ In supplemental files ☐ Not relevant ☐

If not relevant, please explain:

- Is the generalizability (external validity) of the findings taken into account with regard to
  - the target population?

In manuscript ■ In supplemental files ☐ Not relevant ☐

If not relevant, please explain:

  - other contextual issues?

In manuscript ■ In supplemental files ☐ Not relevant ☐

	If not relevant, please explain: • Is there discussion of implications for future research, program, or policy In manuscript ▬ In supplemental files ☐ Not relevant ☐ If not relevant, please explain:

JARS: EXP: These questions should be answered for all studies with an experimental manipulation or intervention (in addition to the JARS: ALL Questionnaire)

METHODS
 	
Experimental manipulations or interventions:
	In the Method section of a study with an experimental manipulation or intervention, please provide the information requested below, regardless of whether it also appears in the manuscript or a supplemental file. If the information requested is irrelevant to the study, briefly explain why.
	
	• Please provide the details about the experimental manipulations or interventions intended for each study condition, including control groups and specifically including
	
	  • the **content of the specific experimental manipulations or interventions**—a summary or paraphrasing of instructions (unless they are unusual or compose the manipulation, in which case they may be presented verbatim):
	
	  • the **method of manipulation or intervention delivery**—a description of apparatus and materials used and their function in the experiment:
	
	  Identify specialized equipment by model and supplier:
	
	  • the **deliverers**, that is, who delivered the manipulations or interventions
	
	  ○ level of professional training:

- level of training in specific manipulations or interventions:

- the number of deliverers and, in the case of interventions, the M, SD, and range of number of individuals/units treated by each:

- the **setting**, that is, where the manipulations or interventions occurred:

- the **exposure quantity and duration**, that is, how many sessions, episodes, or events were intended to be delivered and how long they were intended to last:

- the **time span**, that is, how long it took to deliver the intervention or manipulation to each unit:

---------- ***Masking:***	• activities to increase compliance or adherence (e.g. i**ncentives**): • the **use of languages** other than English and the translation method: ---------- • Were participants, those administering the interventions, and those assessing the outcomes unaware of condition assignments? Yes☐ No ☐ If no, why not? • If masking took place, how was it accomplished, and how was its success evaluated?

Units of delivery and analysis:	• Unit of delivery: How were participants grouped during delivery? ○ What was the smallest unit that was analyzed (and, in the case of experiments, that was randomly assigned to conditions) to assess manipulation or intervention effects (e.g., individuals, work groups, classes)? • If the unit of analysis differed from the unit of delivery, please describe the analytical method used to account for this (e.g., adjusting the standard error estimates by the design effect or using multilevel analysis):

RESULTS **----------** ***Participant flow:***	***For the Results section, please indicate below the page number, table, or supplemental file in which the information can be found.*** • What was the total number of groups (if the experimental manipulation or intervention was administered at the group level), and what was the number of participants assigned to each group?
---------- ***Treatment fidelity:***	**----------** • What evidence is there that the deliverers of treatment adhered to the respective intervention manuals/guidelines? • What evidence is there that the treatments were delivered competently?

Statistics and data analysis:	• Were the analyses intent-to-treat☐, complier average causal effect☐, or other or multiple ways☐? Please explain:
Adverse events and side effects:	• Please describe all important adverse events or side effects in each experimental or intervention:

DISCUSSION	***For the Discussion section, please indicate below the page number, table, or supplemental file in which the information can be found.***

- Do results discussed take into account the mechanism by which the manipulation or intervention was intended to work (causal pathways) or alternative mechanisms?

  Yes☐ No☐

  If no, please explain:

- If an intervention is involved, is there discussion of the success of and barriers to implementing the intervention, and the fidelity of implementation?
-

  Yes☐ No☐

  If no, please explain:

- Is there a discussion of the generalizability (external validity) of the findings taking into account
  - the characteristics of the intervention?
  -

    Yes☐ No☐

If no, please explain:

- how and what outcomes were measured?

  Yes☐ No☐

  If no, please explain:

- length of follow-up?

  Yes☐ No☐

If no, please explain:

- incentives?

  Yes☐ No☐

If no, please explain:

- compliance rates?

  Yes☐ No☐

  If no, please explain:

- Is there discussion of the **clinical or practical significance** of outcomes and the basis for these interpretations?

  Yes☐ No☐

  If no, please explain:

JARS: RCT: These questions should be answered for all studies with an experimental manipulation or intervention that employed random assignment to experimental conditions (in addition to JAR:ALL and JARS: EXP)

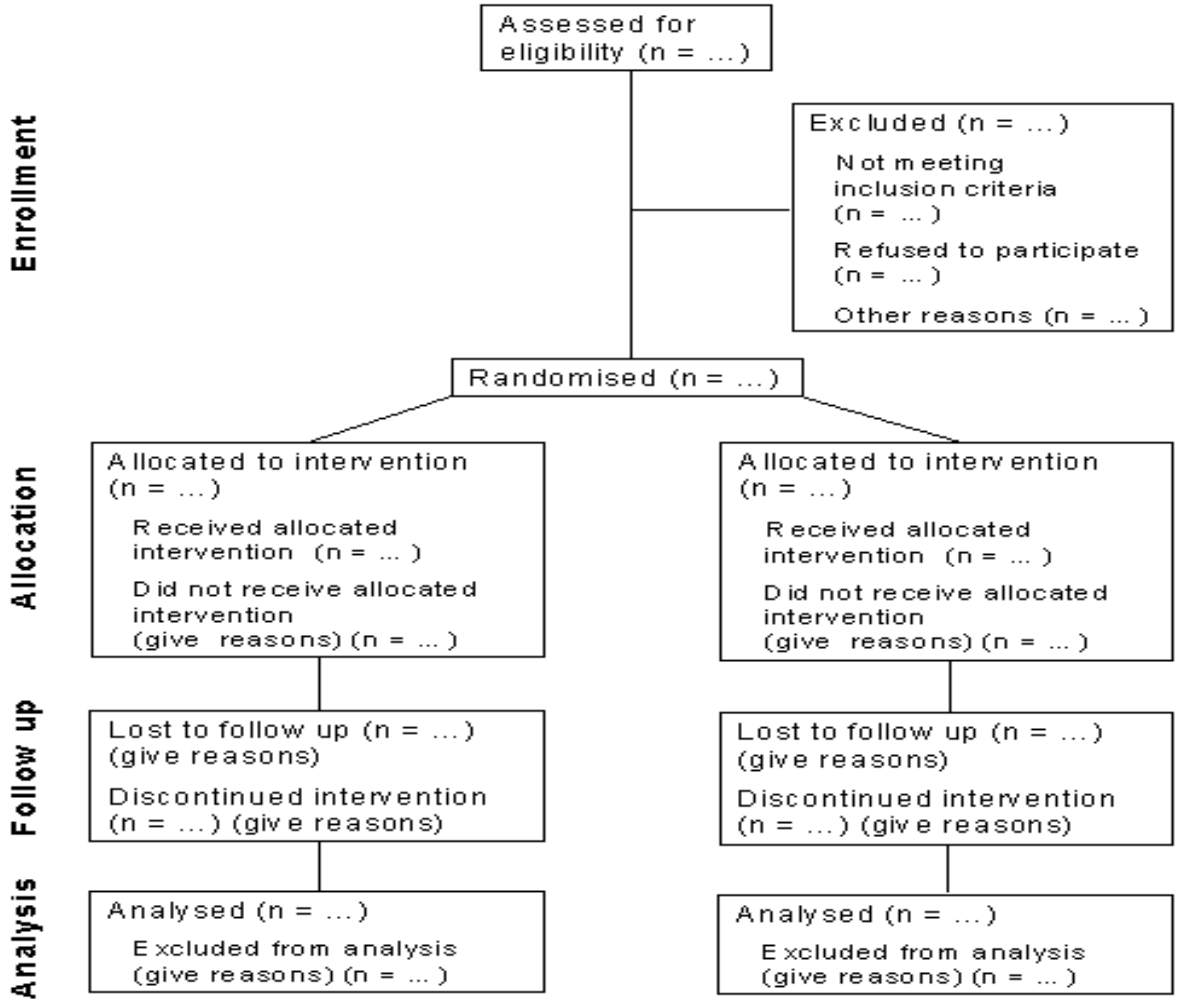
METHOD	***In the Method section of a study that employed random assignment to experimental conditions, please provide the information requested below, regardless of whether it also appears in the manuscript or a supplemental file. If the information requested is irrelevant to the study, briefly explain why.***
---------- Random assignment – method:	• What procedures were used to generate the random assignment sequence (including details of any restrictions—e.g., blocking, stratification)? [ ]
---------- Random assignment – concealment:	--- • Was the sequence concealed until experimental or intervention sequence was assigned? Yes ☐ No☐ If no, why not? [ ] ---

---------- ***Random assignment – implementation:***	• Who generated the assignment sequence? • Who enrolled participants? • Who assigned participants to groups?

JARS: QED: These questions should be answered for all studies with an experimental manipulation or intervention that did not employ random assignment to experimental conditions (in addition to JARS: All and JARS: EXP).

METHOD ***Assignment method:***	• What was the unit of assignment (the unit being assigned to study conditions—e.g., individual, group, community)? • What was the method used to assign units to study conditions, including details of any restriction (e.g., blocking, stratification, minimization)? • What procedures were employed to help minimize potential bias due to nonrandomization (e.g., matching, propensity score matching)?

Figure 1. Diagram showing the flow of participants through each stage of a randomized trial.



JARS: MISC: These questions should be answered for all studies not employing an experimental manipulation or intervention (in addition to JARS: All).

Please provide below as detailed a description as possible of the research design used in the study or studies. This description should be at least as detailed than that expected in all APA journals. There is no restriction on length.

EFA and CFA methods: Latent factor models were implemented using the Mplus Version 6 (L. Muthén & Muthén, 2010). Response variables were treated as ordinal measures, and the model was estimated using WLSMV. EFA was conducted using the exploratory structural equation modeling (ESEM)/EFA in the CFA framework, allowing for the estimation of standard errors associated with loadings, covariances, and other model parameters. An oblique geomin rotation was used. The number of factors to specify was determined through parallel analysis of the polychoric correlation matrix in order to account for the ordinal nature of the response variables. Parallel analysis was implemented in MATLAB R2011a (MathWorks, 2011) using procedures and scripts published by O’ Connor (2000). Polychoric correlation matrices used as inputs were computed using FACTOR 8.1 (Lorenzo-Seva & Ferrando, 2006). For CFA, factor variances were fixed to 1.0 to achieve model identification, and factor covariances were freed. Model fit was evaluated using the comparative fit index (CFI, Bentler, 1990) and the root mean square error of approximation (RMSEA, Steiger, 1990). We used CFI values of .95 and RMSEA values of .06 as cutoffs for good model fit (Hu & Bentler, 1999). RMSEA cutoffs of .08 and .10 indicated acceptable and marginal fit, respectively (MacCallum, Browne, & Sugawara, 1996). To evaluate individual items, we considered the proportion of variation explained by the modeled latent factors, as indexed by the item R2 value. We used a cutoff of .30 for this measure, which can be interpreted as an estimate of the reliability of the item (Brown, 2006). See JARS_SEM for further details.