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 Workload Capacity Across the Visual Field in Young and Older Adults.	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/	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 yes, please explain:

- sources of funding or other support?

  Yes ○ No ●

  If yes, please explain:

- relationships that may be perceived as conflicts of interest?

  Yes ○ No ●

  If yes, please explain:

SCIENTIFIC ABSTRACT	Does the Scientific Abstract describe: • 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: • 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 **----------** ***Participant or subject characteristics:***	***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.*** • What were the eligibility and exclusion criteria for participants or subjects, including any restrictions based on demographic characteristics? All the subjects with normal or corrected-to-normal visual acuity and normal color perception, aging between 18 and 35 for young or 65 above for older group, were eligible to participate in the study. • 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? Participants' age (see above).
---------- ***Sampling procedures:***	**----------** • What procedures were used for selecting participants, including o the sampling method Recruitment via email solicitation to lab subject lists and via ads in local papers, online, and in camupus flyers.

- the percentage of sample approached that participated

  NA %

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

Participants self-selected by responding to ads/solications for research participants.

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

Data collection occured in lab space on the campus of the University of Illinois, in an isolated room.

- Were any agreements and payments made to participants?

Yes, according to the IRB agreements.

- Were IRB agreements obtained, ethical standards met, and safety monitored?
  Yes ◉ No ○

  If no, please explain:

Sample size, power and precision:	• What was the intended sample size? n = 8 per age group • What was the actual sample size? n= 8 per age group • How was sample size determined: ○ power analysis? Yes ☐ No ☒ ○ other methods used to determine accuracy of parameter estimates? Yes ☒ No ☐ If yes, describe: Estimated from sample sizes reported in previous research. The sample size targeted was the minimal number we believed would provide adequate given the time and expense of the experimental protocol (six experimental sessions per participant). ○ stopping rules or interim analyses? Yes ☐ No ☒ If yes, describe:

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:
Response time (RT) Error Rates Workload Capacity (C(t))	RT: time interval between the onset of the stimuli and subjects' response. Error rates: proportion of incorrect responses. Workload Capacity: Measure of processing efficiency derived from RT distributions

- What methods were used to collect data?

- 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:
N/A		

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? None.

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**
---------- ***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*)? All participants completed 6 experimental sessions.
---------- ***Recruitment:***	---------- • Please provide the dates defining the periods of recruitment and repeated measures or follow-up. Period Recruitment: / Start Date: / End Date:
---------- ***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:

- 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))?

  - 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: • For inferential statistics (NHST), please indicate the a priori Type 1 error rate adopted: In place of NHST, the manuscript employs default Bayesian analyes (Rouder & Morey, 2012), and reports the Bayes factor for each effect of interest.

- 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:

See Appendix.

- 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:

N/A.

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

N/A.

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

MatLab, SPSS, R.

- 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:

- 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 experiment employed a within-subject manipulation of target eccentricity, target redundancy, and amount of visual clutter in a visual target identification task. Conditions varied randomly across trials within an experimental session, as controlled by computer software, and did not requirer a deliverer. The above manipulations were paired with a quasi-experimental manipulation of participant age (young adult or elderly adult).
	
	  • the **method of manipulation or intervention delivery**—a description of apparatus and materials used and their function in the experiment:
	Standard PC, E-Prime software (PST, Inc., Pittsburgh, PA), CRT monitor.
	
	  Identify specialized equipment by model and supplier:
	
	  • the **deliverers**, that is, who delivered the manipulations or interventions
	
	  ○ level of professional training:
	NA

- level of training in specific manipulations or interventions:

NA

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

NA

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

NA

- 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:

Each subject completed 6 experimental sessions, contributing a total of 5184 trials.

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

6 hours (each session approximately 1 hour).

- activities to increase compliance or adherence (e.g. i**ncentives**):

A feedback message after each trial to indicate whether the participant's response had been correct or incorrect.

- the **use of languages** other than English and the translation method:

NA

Masking:

- 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 its success evaluated?

The experimental manipulations were delivered randomly within each session for each subject, controlled by the computer.

Units of delivery and analysis:	• Unit of delivery: How were participants grouped during delivery? Participants completed the task individually, in an isolated room. ○ 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)? Individuals. • 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	***For the Results section, please indicate below the page number, table, or supplemental file in which the information can be found.***
---------- ***Participant flow:***	• 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? P. 10. (Subjects).
---------- ***Treatment fidelity:***	***----------*** • What evidence is there that the deliverers of treatment adhered to the respective intervention manuals/guidelines? P.11. (Procedure) • What evidence is there that the treatments were delivered competently? P.11. (Procedure).

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: None.

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:

N/A

- 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:

P.20

- 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)

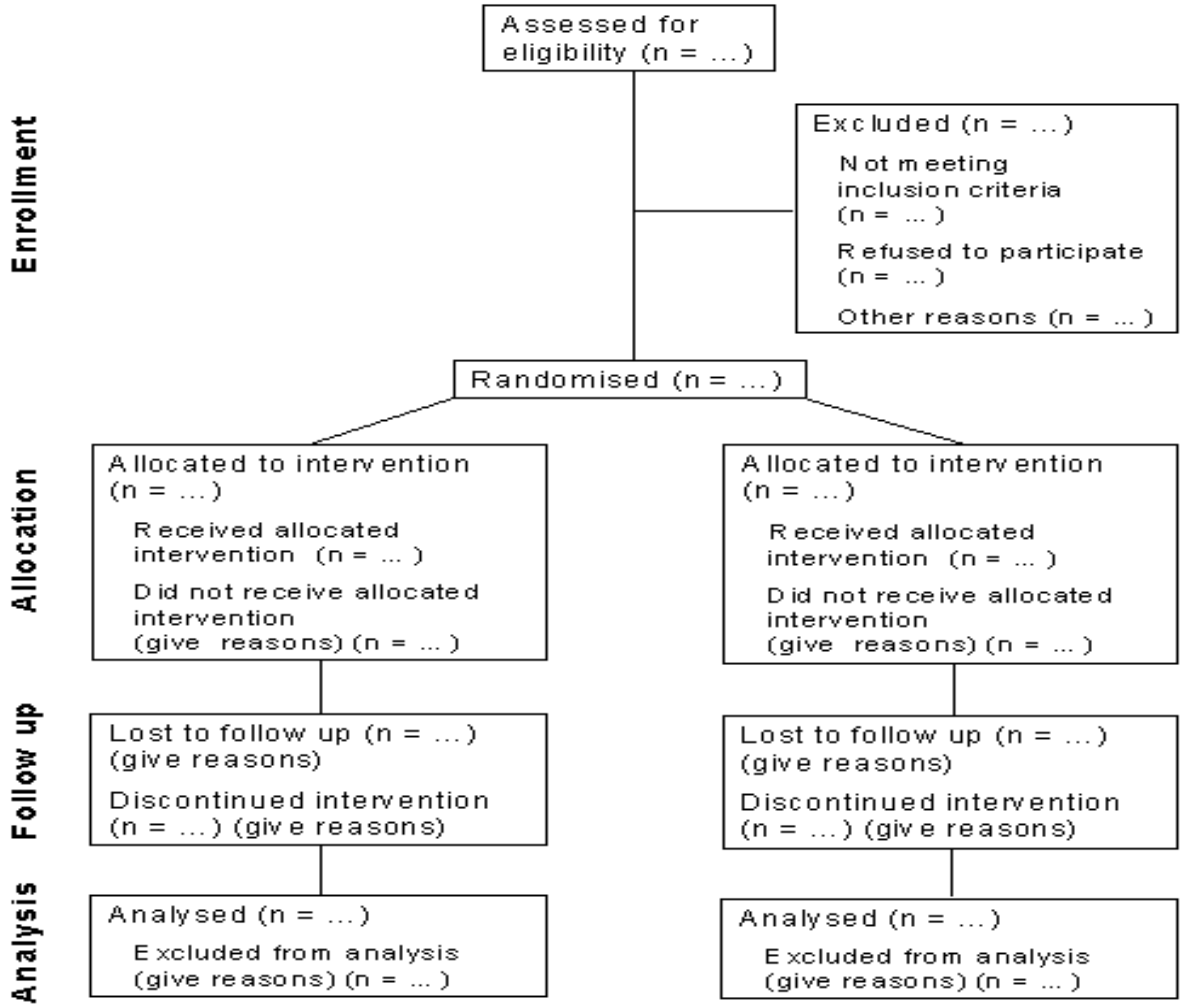
METHOD	***In the Method section of a study that employed random assignment to experimental conditions, please provide the information requested below, regardless of whether it also appears in the manuscript or a supplemental file. If the information requested is irrelevant to the study, briefly explain 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.