



Child Development

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Child Development methodological recommendations

Child Development encourages the submission of empirical papers that use a wide-range of methods to inform developmental questions of interest. One of the aims of empirical papers is to present sufficient material to enable a reader with access to the data to be able to replicate the study.

We recommend that each of the following topics should be addressed in the body of the manuscript or as online supplements:

- 1) **Sample recruitment and selection.** Author(s) should be specific about inclusion or exclusion criteria in populating their analytic sample. For primary data collection, this would include a description of recruitment and characteristics of the eligible population, overall participant response over those eligible, and characteristics of participants relative to those eligible. Power analysis or any other way of justifying the adequacy of the sample size should be provided. In experimental studies randomization protocols and internal validity requirements might be more important than external validity. For secondary data collection, this would include any criteria used to select the sample for analysis related to demographic or socio-economic characteristics, ages or other characteristics of children, families or communities, and selection related to design features of the data (e.g. respondents with information over certain waves of data collection). The final sample should be described according to *Child Development's* [Sociocultural Policy](#).
- 2) **Data-collection and coding.** In primary studies as well as in meta-analyses, it is critical to provide detailed information about the experimental paradigms, tests, observation schedules, or interview formats used (see JARS and MARS, summarized in the APA Publication Manual). Authors are encouraged to report paradigms and coding systems in great detail online. Examples may include video recordings of the experimental setup, the layout of the lab room, crucial parts of the experimental intervention protocol, or fragments of observations with codes attached. Reports of meta-analytic data-collection and coding should fulfill the requirements of PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses: <http://www.prisma-statement.org/>) or similar guidelines. For primary studies a priori power calculations based on previous meta-analytic evidence are strongly recommended.
- 3) **Descriptive Statistical information.** Psychometric information about each of the measures used in the study should be presented, including intercoder reliabilities for observational assessments or meta-analytic codings; internal consistencies and test-retest reliabilities for experimental paradigms; and tests and questionnaires. We

encourage authors to provide descriptive or simulative evidence that supports the choice for the statistical approach (e.g. correlation matrixes), to present precursor analyses or analytic steps that informed the feasibility or the choice of statistical approach, to describe possible violation of assumptions underlying the method of choice, and to present sensitivity analyses that provide some insight into how potentially serious (or not) these violations might be for the findings. In the case of experiments, or randomized control trials, analyses should include tests of equivalence between treatment and control groups of characteristics of participants that were measured at the time of study enrollment.

4) **Model Misspecification.** Even if underlying statistical assumptions are met for a particular analytic approach, there may be other possible areas of model misspecification. For this reason we encourage authors to consider whether they can produce findings that shed light on the sensitivity of results to alternative specifications of the sample, outcomes and key independent variables. These findings should be made available in an online supplement. We would also like author(s) to describe the extent of missing data and strategies to address missing data, including arguments for applying the chosen missing data imputation technique and sensitivity of results to inclusion or exclusion of missing item- or observation-level data. Finally, not only statistical significance should be reported, but also effects sizes as appropriate. Discussions of the results should also reflect the magnitude of the effects.

One strength of developmental research is the diversity of approaches used to build empirical evidence. These broad recommendations are designed to support the production of accessible and reproducible high quality empirical research following *Child Development's* strong tradition of publishing rigorous research, but without excluding innovative hypothesis-generating inquiry. For the application of the recommendations, a clear-cut differentiation between context of discovery and context of justification (Popper, 2014) and a related differentiation in methodological and statistical requirements is warranted.

The recommendations emphasize rigor, reliability and replicability, which are crucial for studies located in the context of justification. Many ground-breaking studies, however, are positioned in the context of discovery, for which less rigid adherence to the guidelines is required as long as authors make crystal-clear that their work is exploratory, and suggest ways in which their preliminary results might be more rigorously tested. *Child Development* wants to remain a scientific forum for reports and debates on exploratory work that is crucial for generating fruitful hypotheses and advancing theory development and (clinical) practice in the field of child development.

References

Popper K. R. (2014). *Conjectures and Refutations: the Growth of Scientific Knowledge* (2nd ed.) London and New York, NY: Routledge.