



THEMATIC REVIEW

Reporting single-case design studies: Advice in relation to the designs' methodological and analytical peculiarities



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Abstract The current text provides advice on the content of an article reporting a single-case design research. The advice is drawn from several sources, such as the *Single-case research in behavioral sciences reporting guidelines*, developed by an international panel of experts, scholarly articles on reporting, methodological quality scales, and the author's professional experience. The indications provided on the Introduction, Discussion, and Abstract are very general and applicable to many instances of applied psychological research across domains. In contrast, more space is dedicated to the Method and Results sections, on the basis of the peculiarities of single-case designs methodology and the complications in terms of data analysis. Specifically, regarding the Method, several aspects strengthening (or allowing the assessment of) the internal validity are underlined, as well as information relevant for evaluating the possibility to generalize the results. Regarding the Results, the focus is put on justifying the analytical approach followed. The author considers that, even if a study does not meet methodological quality standards, it should include sufficiently explicit reporting that makes possible assessing its methodological quality. The importance of reporting all data gathered, including unexpected and undesired results, is also highlighted. Finally, a checklist is provided as a summary of the reporting tips.

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PALABRAS CLAVE

Diseños de caso
único;
Informes;
Análisis de datos;
Estándares de calidad

Informes en diseños de caso único: consejos en base a las peculiaridades metodológicas y estadísticas de los diseños

Resumen El texto proporciona consejo sobre el contenido necesario para aquellos artículos que informan sobre estudios que utilizan diseños de caso único. El consejo se basa en diferentes fuentes, como *Single-case research in behavioral sciences reporting guidelines*,

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recomendaciones desarrolladas por un panel internacional de expertos, artículos científicos sobre informes, escalas de calidad metodológica y la experiencia profesional del autor. Las indicaciones proporcionadas sobre la Introducción, la Discusión y el Resumen son muy generales y aplicables a muchos ejemplos de investigación psicológica aplicada en diferentes ámbitos. En cambio, se dedica más espacio a las secciones Método y Resultados, en relación con las peculiaridades de la metodología de los diseños de caso único y las complicaciones en cuanto al análisis de datos. Específicamente, en cuanto al Método, se destacan aspectos que fortalecen (o permiten la evaluación de) la validez interna, además de la información relevante para valorar la posibilidad de generalizar los resultados. En cuanto a los Resultados, se focaliza la justificación del enfoque analítico seguido. El autor considera que, incluso si un estudio no cumple con los estándares de calidad metodológica, el informe debería ser lo suficientemente explícito para favorecer la valoración de la calidad metodológica. Se subraya la importancia de reportar todos los resultados obtenidos, incluidos los inesperados o indeseados. Finalmente, se proporciona una lista de verificación como resumen de los consejos.

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In the current text we assume that the reader is already familiar with the main features of single-case designs (SCD, as described in depth in [Barlow, Nock, & Hersen, 2009](#); [Gast & Ledford, 2014](#); [Kennedy, 2005](#); [Kratochwill & Levin, 2014](#); [Vannest, Davis, & Parker, 2013](#); see also [Bono & Arnau, 2014](#) for a textbook in Spanish) and that s/he is an applied researcher considering the use of SCD or already with experience in the field. Thus, we assume that the reader is mainly interested in the key aspects that need to be reflected in the report describing a SCD study.

Recommendations about reporting

Reporting resources

When a research is performed and its results are to be shared publicly, it is important that the report reflects in a transparent way the process followed in order to make possible: (a) the assessment of the study's internal and external validity that each reader can perform independently, and (b) replicating the study, if considered necessary. The *Single-case research in behavioral sciences reporting guidelines* (SCRIBE; [Tate et al., 2016](#)) should be document of reference, because it is the result of a collaboration of an international panel of experts via a Delphi study. However, the SCRIBE is intended to refer to "minimum reporting standards" ([Tate et al., 2016, p. 11](#)), whereas we here point at some points that have been suggested, in several scholarly articles, for inclusion in a report. In what follows, we refer to different pieces of the article, paying special attention to the Method and Results sections. The Method section is crucial for evaluating the quality of the evidence provided by the study ([Tate, Perdices, McDonald, Togher, & Rosenkoetter, 2014](#)), whereas the Results section may entail certain complications due to the variety of analytical approaches and lack of consensus in the SCED context. A summary of the pieces of advice is presented in [Appendix A](#) in the form of a checklist.

Introduction, conclusion and abstract

For these three parts of the text, the rules usually followed for any kind of empirical psychological research are applicable to SCD. We recommend [Sternberg \(2003\)](#), for a textbook on the topic.

Introduction

This section should include a specification of the problem of interest and how it has been studied previously, plus what does the evidence published in peer-reviewed literature suggests about each of the approaches for dealing with the problem. It is also necessary to provide a rationale for choosing one of the existing approaches or for proposing a new one. Part of the theoretical framework are the definitions of the relevant terms, introducing any necessary abbreviations ([Sternberg, 2003](#)), but not too many, unless they are very common in the field (e.g., MBD, ATD are common abbreviations for designs and PND is a widely known abbreviation of a nonoverlap index for quantifying the difference between conditions). At the end of the Introduction aims are clearly specified, as well as any formal hypothesis, if available. If the structure of the article is complex or unusual, it is important to present its organization at the end of the Introduction. Finally, regarding the bibliographic basis, the authors should ensure that the references used are relevant, sufficient, and (at least some of them) recent.

Discussion

In this section it is necessary to relate the results to the aims and to compare these results with previous findings ([Wolery, Dunlap, & Ledford, 2011](#)). In case there are formal hypothesis postulated in the Introduction, the authors have to distinguish expected results from unexpected ones and explicitly state which explanations of the results are

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