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Review article

Social validity in single-case research: A systematic literature review of prevalence and application

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ABSTRACT

Background: Single-case research (SCR) has been a valuable methodology in special education research. Montrose Wolf (1978), an early pioneer in single-case methodology, coined the term “social validity” to refer to the social importance of the goals selected, the acceptability of procedures employed, and the effectiveness of the outcomes produced in applied investigations. Since 1978, many contributors to SCR have included social validity as a feature of their articles and several authors have examined the prevalence and role of social validity in SCR.

Aim and methods: We systematically reviewed all SCR published in six highly-ranked special education journals from 2005 to 2016 to establish the prevalence of social validity assessments and to evaluate their scientific rigor.

Results: We found relatively low, but stable prevalence with only 28 publications addressing all three factors of the social validity construct (i.e., goals, procedures, outcomes). We conducted an in-depth analysis of the scientific rigor of these 28 publications.

Conclusions: Social validity remains an understudied construct in SCR, and the scientific rigor of social validity assessments is often lacking. Implications and future directions are discussed.

What this paper adds

This review offers an updated description of the prevalence of social validity assessments in single-case research, as the most recent systematic review that considered SCR conducted across content areas and populations was conducted almost 20 years ago. This review also systematically evaluates the scientific rigor of the process used in a subset of social validity assessments, a perspective not undertaken in other reviews. In addition to considering rigor, this review also examines if and how social validity assessment findings were interpreted with experimental findings to draw conclusions about intervention effectiveness.

1. Introduction

Single-case experimental research plays an important role in the field of special education (Horner et al., 2005). This methodology has offered a way for researchers to experimentally evaluate the efficacy of an intervention on an observed behavior for individuals or groups of individuals (e.g., across classrooms or schools; Gast & Ledford, 2014; Kazdin, 2011; Kennedy, 2005). Given the heterogeneity of the populations served by special educators, single-case research (SCR) has contributed substantially to intervention efforts in the field (Horner et al., 2005; Kratochwill et al., 2010).

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1.1. Definition and importance of social validity in research

Following the establishment of SCR within applied behavior analysis (ABA), the social validity of the goals, procedures, and outcomes of an intervention was espoused as an essential feature of applied research. Defining social validity as the “changes in behavior that are clinically significant or actually make a difference in the client’s life” (Kazdin, 1977, p. 427), early leaders in ABA and SCR, like Wolf (1978) and Kazdin (1977), called for researchers to attend to this critical component of intervention efforts. Wolf defined the construct of social validity as consisting of three factors: (a) the *goals* of the intervention, or what behaviors the intervention is intended to change; (b) the *procedures* used during intervention, considering questions like, “Do the ends justify the means? ...Do the participants, caregivers, and other consumers consider the treatment procedures acceptable?” (Wolf, 1978, p. 207); and (c) the *outcomes*, “all the results, including any unpredicted ones,” that the intervention produced (Wolf, 1978, p. 207). Similar stances exist in other related fields, like educational program evaluation and educational policy (e.g., Simons, 2004; Weiss, 1998). Social validity is considered essential when attempting to implement research-based interventions at scale and with sustainability (Cook, Cook, & Landrum, 2013; Reimers, Wacker, & Koeppl, 1987) and to defend against developing interventions likely to fail in real-world applications (Schwartz & Baer, 1991). As the research community seeks to address the research-to-practice gap, attention to social validity is therefore critical because interventions deemed to be impractical, unacceptable, or addressing less important goals and outcomes are less likely to be adopted in practice (Leko, 2014; Lloyd & Heubusch, 1996).

Since the original call, researchers have explored numerous avenues for capturing this complex construct within a wide variety of educational contexts (Carr, Austin, Britton, Kellum, & Bailey, 1999; Kennedy, 1992; Reimers, Wacker, & Koeppl, 1987; Schwartz & Baer, 1991; Spear, Strickland-Cohen, Romer, & Albin, 2013; Turan & Meadan, 2011). At least three methods of assessing social validity have been proposed: (a) subjective evaluation, (b) normative comparison, and (c) maintenance/sustainability measures (Kazdin, 1977; Kennedy, 2002; Wolf, 1978). Subjective evaluation refers to gathering information regarding people’s perceptions of particular dimensions of the goal, procedures, and/or outcomes of an experiment (Kazdin, 2011; Kennedy, 2005), often using measures such as interviews, surveys, and scales. Normative, or social, comparison is the process of comparing the participants’ targeted behavior (i.e., dependent variable) to those of a reference group (i.e., a sample of individuals whose behavior is considered acceptable, “typical,” or desirable) (Kazdin, 2011; Kennedy, 2005). To conduct normative comparisons, researchers have, for example, collected data on target behaviors for both participants receiving the intervention and for participants perceived as having acceptable or “typical” levels of these same behaviors (e.g., Chan et al., 2011; Hochman, Carter, Bottema-Beutel, Harvey, & Gustafson, 2015). Sustainability or maintenance is an indicator of whether the procedures and outcomes of an experiment continue once the research is completed and the researchers are no longer involved (Kennedy, 2005). Kennedy (2002) posited that measures of the extent to which behavior changes are maintained or sustained over time is critical to claims of the social validity of an intervention. Collecting maintenance data after termination of the intervention is now an indicator of high-quality SCR (Horner et al., 2005).

In the 40 years since Wolf and Kazdin’s original calls, efforts have been made to increase prevalence, extend the scientific rigor, and expand methods used to assess social validity within SCR. In 2005, Horner and colleagues included assessment of social validity as a quality indicator for SCR in special education, stating that both the selection of the dependent variable and the magnitude of change in that variable, resulting from the intervention, should be socially important. In addition, they stated that implementation of the independent variable should be practical and cost effective and that “social validity is enhanced by implementation of the independent variable over extended time periods, by typical intervention agents, in typical physical and social contexts” (p. 174). Schwartz and Baer (1991) called for increased psychometric rigor and increased attention to validity and reliability in measures assessing social validity.

Still other researchers have highlighted the importance of the timing of social validity assessment activities, encouraging researchers to assess social validity before, during, and after an intervention is applied. For example, researchers have cited the impact that pre-intervention buy-in (e.g., perceived social validity prior to experience) may have on fidelity of implementation and, therefore, on the perceptions of the social validity of the intervention (Gresham & Lopez, 1996; Gresham, McMillian, Beebe-Frankenberger, & Bocian, 2000; Hieneman, Dunlap, & Kincaid, 2005). Researchers have also expanded methodological options for assessing social validity by employing qualitative inquiry, including interview, focus group, and case study methods (Leko, 2014). In addition, multiple scales have been developed as subjective evaluation tools (Carter, 2007; Harrison, State, Evans, & Schamberg, 2015; see also Reimers et al., 1987).

In conversations about the rigor of social validity assessments, single-case researchers have often wrestled with the notion of objective versus subjective measures. For example, Schwartz and Baer (1991) posited that “objective, clearly valid measures of social validity” are required for rigorous assessment of the construct (p. 202). Others, beginning with Wolf’s original call, have argued that “subjective” measures are valuable, perhaps even necessary, to assess social validity (e.g., Hawkins, 1991; Hurley, 2012; Ledford, Hall, Conder, & Lane, 2016; Wolf, 1978). Objective versus subjective measurement, however, is only one way of conceptualizing rigor. Through this lens, rigor is determined by the reader’s perceptions of the defensibility of the *type* of data generated (i.e., epistemology). Another lens for conceptualizing rigor is the *process* used (e.g., scientific or systematic; anecdotal or informal) to generate, analyze, and interpret any type of data.

Scientific inquiry, regardless of methodology, can be conducted in more or less rigorous ways. For example, researchers can administer a hastily-composed interview protocol as an afterthought to their single-case experiment or purposefully interview participants before and after the experiment to address a research question about social validity. Similarly, social comparison data can be collected with peers who are not considered to be a normative and whose data are not subjected to interobserver agreement (IOA) procedures, or data can be collected from purposefully sampled peers and subjected to the same IOA procedures as the dependent

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