



Using ABC narrative recording to identify the function of problem behavior: A pilot study



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ARTICLE INFO

Article history:

Received 28 March 2013

Received in revised form 16 May 2013

Accepted 21 May 2013

Available online 19 June 2013

Keywords:

ABC narrative recording

Descriptive assessment

Functional analysis

Indirect assessment

Problem behavior

QABF

ABSTRACT

Many professionals report using ABC narrative recording to identify the function of problem behavior in children with developmental disabilities, but research has not established whether their analyses yield valid results. Thus, the purpose of this study was to examine whether the function identified by expert reviewers using ABC narrative recordings would match the one identified by a functional analysis (FA) and the Questions About Behavioral Function (QABF) scale in four children with developmental disabilities. The functions identified by all twelve experts using the ABC narrative recordings matched at least one of the functions identified by the FA for three of four participants. The experts' analyses also agreed with the informant-based assessment at a statistically significant level for two of three participants with a conclusive QABF. Altogether, the results suggest that ABC narrative recording may be useful to generate hypotheses to identify the function of problem behavior, but that more research is needed before recommending its use as a standalone functional behavior assessment.

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1. Introduction

Conducting a functional behavior assessment is generally considered best practice in the assessment and treatment of problem behavior in individuals diagnosed with a developmental disability (Horner & Carr, 1997; Iwata & Dozier, 2008). Clinicians and researchers use functional behavior assessments to identify the contingencies that maintain the occurrence of problem behavior (Matson & Minshawi, 2007). The results of functional behavior assessments subsequently equip the clinician to develop a function-based intervention to replace problem behaviors with more socially appropriate alternatives. For example, a function-based intervention for problem behavior maintained by attention may involve teaching the individual to appropriately request attention using a picture whereas an intervention unrelated to function may involve the delivery of an arbitrary reinforcer (e.g., edibles) when the problem behavior has not occurred for a certain period of time. Researchers have shown that function-based interventions produce more clinically desirable outcomes than interventions unrelated to function (e.g., Ingram, Lewis-Palmer, & Sugai, 2005; Iwata, Pace, Cowdery, & Miltenberger, 1994; Matson, Bamburg, Cherry, & Paclawskyj, 1999).

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The two methods that have the most empirical support for identifying the function of problem behavior are functional analyses (FA) and checklist-based functional assessments (Matson & Minshawi, 2007). The FA involves the systematic manipulation of antecedent and consequent events during analog conditions (Iwata, Dorsey, Slifer, Bauman, & Richman, 1994). A function is identified when a problem behavior occurs more frequently in the presence than in the absence of certain antecedents and consequences. The FA has been shown to be effective in identifying the contingencies maintaining a wide variety of behavior in individuals with developmental disabilities (Hanley, Iwata, & McCord, 2003). Given that the procedures allow the identification of causal relations, FA methods are typically considered the gold standard by which to identify the contingencies maintaining problem behavior (Fox & Davis, 2005). However, oft-cited barriers to its implementation include risks associated with evoking possibly dangerous behavior, the potential absence of the variables maintaining the problem behavior in an analog setting, concerns related to strengthening or increasing the problem behavior as well as the required time, resources, and effort (Neef & Peterson, 2007). Although researchers have proposed several solutions to minimize the impact of these barriers (Iwata & Dozier, 2008), designing FA still requires professional expertise and sufficient time to observe the occurrence of the problem behavior.

One alternative to FA methods is the use of checklist-based questionnaires, which rely on responses provided by informants (e.g., caregivers, parents, staff). Examples of questionnaires include the Motivation Assessment Scale (MAS; Durand & Crimmins, 1988), the Functional Analysis Screening Tool (FAST; Iwata & DeLeon, 1995), and the Questions About Behavioral Function (QABF; Matson & Vollmer, 1995). To date, only the use of the QABF has amassed substantial empirical support (Matson, Tureck, & Rieske, 2012). The QABF is a 25-item questionnaire that assesses five functions—attention, escape, nonsocial, physical, and tangible. Researchers have shown that interventions based on the results of the QABF were more effective than those that were not (Matson et al., 1999). Moreover, studies comparing the results of the QABF with the results of FA have shown exact agreement between the two assessments in 43% to 86% of individuals with developmental disabilities (Hall, 2005; Healy, Brett, & Leader, 2013; Paclawskyj, Matson, Rush, Smalls, & Vollmer, 2001; Smith, Smith, Dracobly, & Pace, 2012; Tarbox et al., 2009; Watkins & Rapp, 2013). One concern with questionnaires (including the QABF) is that the identified function may differ from one respondent to another (Smith et al., 2012). However, it may be the case that problem behavior may be under different discriminative control across raters (i.e., the function may vary from person to person), which could explain the moderate interrater reliability. This concern notwithstanding, the QABF enjoys acceptable to good interrater reliability (e.g., Paclawskyj, Matson, Rush, Smalls, & Vollmer, 2000; Zaja, Moore, Van Ingen, & Rojahn, 2011) and is empirically valid (e.g., Freeman, Walker, & Kaufman, 2007; Matson & Boisjoli, 2007).

Even though FA and the QABF have the most empirical support in the research literature, descriptive methods continue to be employed (Desrochers, Hile, & Williams-Mosely, 1997; Ellingson, Miltenberger, & Long, 1999; Love, Carr, Almason, & Petursdottir, 2009). In a survey on clinical practices in early intervention, Love et al. (2009) reported that 96% of professionals used descriptive assessments whereas only 56% used experimental FA. Descriptive assessments involve the direct observation of antecedents and consequences associated with the problem behavior in the individual's natural environment (Sloman, 2010). Clinicians and researchers may use one of three methods to collect data during descriptive assessments: scatterplot analysis, ABC continuous recording, and ABC narrative recording (Neef & Peterson, 2007).

The scatterplot analysis involves collecting data on the temporal distribution of the problem behavior throughout the day in order to identify potential functional relations (Touchette, MacDonald, & Langer, 1985). However, in a study with 20 participants diagnosed with an intellectual disability, Kahng et al. (1998) found that the scatterplot produced poor agreement between observers for 5 participants and failed to detect temporal patterns in the remaining 15 participants. Thus, empirical support for the scatterplot is currently insufficient (Matson & Minshawi, 2007).

With ABC continuous recording, clinicians collect real-time continuous data on the problem behavior as well as on the events that precede and follow it. Calculations are then carried out to determine the probability of the behavior given the occurrence of specific antecedents, consequences, or both (McComas et al., 2009). Researchers have repeatedly shown that ABC continuous recording does not match the results of FA in a large majority of cases (Hall, 2005; Lerman & Iwata, 1993; Tarbox et al., 2009; Thompson & Iwata, 2007). In the previously cited studies, the results of both analyses matched for only 14% to 33% of cases. These results are no better than random guessing, which should identify the same function in 25% of cases (i.e., assuming that each behavior only has one function). One explanation for the weak validity of descriptive assessment is that attention is often correlated with problem behavior regardless of its function (St. Peter et al., 2005). A second explanation is that the function of problem behavior maintained by thin reinforcement schedules may be difficult to detect given that the contingencies may only be observable for a fraction of occurrences (Marion, Touchette, & Sandman, 2003). As such, ABC continuous recordings are not recommended as standalone methods to identify the function of problem behavior (Thompson & Iwata, 2007).

A third type of descriptive assessment is ABC narrative recording, which involves anecdotally reporting the events correlated with the problem behavior. For example, a parent may be asked to describe in writing the environmental events immediately before and after a problem behavior. Ellingson et al. (1999) reported that approximately 30% of professionals used this type of functional behavior assessment in their practice. In a more recent study, Lerman, Hovanetz, Strobel, and Tetreault (2009) reported that 12 of 16 schoolteachers had experience with ABC narrative recordings prior to their study. Yet, despite its popularity, we were unable to locate a single study that examined the validity of ABC narrative recordings in identifying the function of problem behavior.

The analysis of narrative recordings by professionals may not necessarily yield the same results as other descriptive assessments. In contrast with quantitative analyses used in the ABC continuous recording, professionals may qualitatively

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