



Review article

A systematic review and evaluation of response redirection as a treatment for challenging behavior in individuals with developmental disabilities[☆]



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ABSTRACT

Response redirection is widely used in clinical practice as a treatment for repetitive behavior or stereotypy in persons with developmental disabilities. However, to date the procedure has received comparatively little empirical evaluation. The current review sought to examine the literature describing the efficacy of response redirection alone, response interruption and redirection (RIRD), and multi-element treatment packages incorporating response redirection, as interventions for challenging behavior in individuals with developmental disabilities. Additionally, the status of response redirection, and RIRD, as evidence-based practice was evaluated in accordance with Reichow's (2011) recently developed criteria. Results indicated that interventions involving response redirection or RIRD typically led to large decreases in challenging behavior but did not result in behavioral suppression. On the basis of the current literature and in accordance with Reichow's criteria, interventions incorporating response redirection do not yet constitute evidence-based practice. The implications of these findings, for both research and practice, are discussed.

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Challenging behaviors, such as stereotypy and self-injury, are common among individuals diagnosed with developmental disabilities with prevalence estimates as high as 82% reported in the literature (Poppes, Van der Putten, & Vlaskamp, 2010). Previous reviews have supported the use of behavioral interventions for the reduction of challenging behaviors including self-injury (Kahng, Iwata, & Lewin, 2002), stereotypy (Mulligan, Healy, & Lydon, 2013), aggression (Brosnan & Healy, 2011), and pica (McAdam, Sherman, Sheldon, & Napolitano, 2004). More specifically, reviews have found strategies such as differential reinforcement (Chowdhury & Benson, 2011), functional communication training (Kurtz, Boelter, Jarmolowicz, & Hagopian, 2011), noncontingent reinforcement (Carr, Severtson, & Lepper, 2009), self-management procedures (Harchik, Sherman, & Sheldon, 1992), the provision of choice (Shogren, Faggella-Luby, Bae, & Wehmeyer, 2004) and the use of activity schedules (Lequia, Machalicek, & Rispoli, 2012) to be effective strategies for reducing challenging behaviors.

There is clear evidence for the success of behavior analysis in treating a myriad of topographies of challenging behavior seen in developmental disabilities. However, the difficulty in treating those behaviors identified through functional analysis to be automatically reinforcing or “self-stimulatory” has been highlighted by several researchers (e.g., Cunningham & Schreibman, 2008; LeBlanc, Patel, & Carr, 2000; Vollmer, 1994). Many instances of challenging behaviors have been shown to be maintained by some form of automatic reinforcement. For example, Hanley, Iwata, & McCord (2003) found that functional analysis indicated that 61% of stereotypy cases, 24.8% of self-injury cases, and 50% of pica cases, were maintained by automatic reinforcement (see also Healy, Brett & Leader, 2013). Researchers have successfully treated automatically reinforced behaviors with interventions incorporating differential reinforcement, noncontingent reinforcement, environmental enrichment, response blocking, competing stimuli, and punishment (Hagopian & Toole, 2009). However, interventions incorporating response blocking have been found to result in unwanted collateral behaviors, such as aggression, in several studies (Hagopian & Adelinis, 2001; Lerman, Kelley, Vorndran, & Van Camp, 2003; Rapp, Dozier, & Carr, 2001). These findings, and the emphasis on utilizing non-aversive, less restrictive interventions, have led researchers to investigate the use of response redirection during the treatment of such behaviors.

Response redirection involves the prompting of an alternative appropriate response contingent on the occurrence of the target behavior (Giles, St Peter, Pence, & Gibson, 2012). For example, response redirection to target stereotypy may involve the delivery of prompts to the individual to engage in an alternative response each time they emit the target behavior. Ahearn, Clark, MacDonald, and Chung (2007) provide an example of the mechanism of response redirection to reduce vocal stereotypy in four participants with autism. Specifically, contingent on the occurrence of the target behavior, participants were required to respond to a series of social questions or vocal imitations until they successfully fulfilled a response requirement of three consecutive correct responses without engaging in the target behavior. Response redirection has been combined with a variety of other interventions such as response blocking, noncontingent reinforcement, the provision of competing or preferred stimuli, and differential reinforcement, in multi-element treatment packages. It has also been used in conjunction with response interruption, an intervention referred to as response interruption and redirection (RIRD), to treat vocal stereotypy, a behavior which is not amenable to response blocking or physical intervention. When RIRD is in place, the emission of the target behavior is interrupted, typically using a verbal interruption to capture the individual's attention, and an alternative behavior, such as appropriate language, is prompted. Most commonly, vocal demands are issued contingent on an occurrence of vocal stereotypy and are continuously presented until the individual has produced three successful consecutive responses in the absence of stereotypy (Ahearn, Clark, & MacDonald, 2007; Liu-Gitz & Banda, 2010). In addition to decreasing stereotypy, RIRD has been shown to produce concomitant increases in appropriate vocalizations in many studies (Dickman, Bright, Montgomery, & Miguel, 2012). The mechanism through which RIRD achieves its effects has been questioned (Hagopian, González, Rivet, Triggs, & Clark, 2011) with some suggesting that the redirection component functions to punish the targeted behavior (Dickman et al., 2012).

The present review sought to critically examine the extant literature on the utility of response redirection as an intervention for challenging behavior among individuals with developmental disabilities. A quantitative analysis of treatment outcomes and an evaluation of the empirical support for the procedure were also undertaken.

1. Method

1.1. Literature search

Systematic searches were carried out using the following databases: Scopus, Psychology and Behavioral Sciences Collection, PsycInfo, ERIC, MedLine, and Web of Science. In all databases, searches were conducted by inputting “response

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