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Inappropriate mealtime behavior: The effects of noncontingent access to preferred tangibles on responding in functional analyses

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ABSTRACT

An understanding of the functional variables associated with inappropriate mealtime behavior (IMB) is critical to developing an effective and efficient treatment for food refusal. To this aim, functional analysis methodology has been modified for the meal context, and previous research has shown that multiple sources of reinforcement maintain IMB. Functional analysis literature, related to severe problem behavior, suggests that access to preferred stimuli may abolish or compete with social reinforcers in some cases. The role of noncontingent access to preferred stimuli during the assessment of IMB has not been evaluated. The purpose of the current study was to examine the effects noncontingent access to preferred toys/activities on IMB in the presence and absence of social consequences. The specific aims were to evaluate: (1) levels of IMB when the spoon is held stationary at the child's lips when preferred tangible stimuli are present noncontingently vs. absent; (2) levels of IMB when social consequences were provided contingent upon IMB when preferred tangible stimuli are present noncontingently vs. absent. For many participants, levels of IMB were reduced with the inclusion of preferred toys/activities; while for one, levels of IMB increased. Possible implications of these findings on functional analyses of IMB will be discussed.

1. Introduction

1.1. Developmental disabilities and feeding difficulties

Feeding difficulties are common problems among children with developmental disabilities (Sharp, Jaquess, Morton, & Herzinger, 2010). Pediatric food refusal has a significant impact on a child's ability to participate in social, cultural, and community activities; and may also have deleterious consequences for the child's overall growth and health (American Psychiatric Association, 2013). As such, previous research has evaluated what environmental factors contribute to and maintain food refusal (Bachmeyer et al., 2009; Piazza, Fisher, et al., 2003).

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1.2. Treatments for severe feeding problems

Inappropriate mealtime behavior (IMB), defined here as head turns, disruptions, mouth covers (e.g., attempts to block access to his/her mouth), and aggression, is often a major hurdle to promoting developmentally appropriate eating. Given the social nature of eating and the multiple components required, it is not uncommon for food refusal to have multiple sources of environmental control (Bachmeyer et al., 2009). Pre-treatment assessments such as functional analyses aim to identify the specific sources of reinforcement. The results of these assessments then provide information necessary to develop efficient and effective function-based treatments. For children with severe food refusal, the treatment often involves some form of escape extinction (e.g., nonremoval of the spoon), as escape from the food or meal context is a commonly identified reinforcer (LaRue et al., 2011). Although reinforcement-based strategies may not be sufficient to increase consumption, they often enhance the treatment for food refusal (e.g., reducing levels of negative vocalization or IMB) (Cooper et al., 1995; Piazza, Patel, Gulotta, Sevin, & Layer, 2003; Reed et al., 2004; Wilder, Normand, & Atwell, 2005). Thus, multicomponent treatment packages involving both positive and negative reinforcement are common (Bachmeyer et al., 2009).

Specifically, Reed and colleagues (2004) found that noncontingent access to toys and attention did not impact levels of consumption, but did result in fewer bursts of IMB under escape extinction (i.e., nonremoval of the spoon) conditions. Cooper and colleagues (1995) found that noncontingent access to toys and attention increased consumption for some individuals. Similarly, Wilder and colleagues (2005) reported increased consumption and decreased levels of self-injurious behavior in the presence of preferred toys and activities.

Previous findings in the functional analysis literature related to severe problem behavior suggest that access to preferred stimuli may abolish or compete with attention as a reinforcer in some cases (McCord & Neef, 2005; Ringdahl, Winborn, Andelman, & Kitsukawa, 2002; Roscoe, Carreau, MacDonald, & Pence, 2008). These findings have highlighted the effects of potential establishing operations during functional analyses and led to the suggestion that clinicians consider the possibility that the availability of leisure items may mask a social attention function (McCord & Neef, 2005; Roscoe et al., 2008). Given these findings, the purpose of the current study was to examine the effects of noncontingent access to preferred toys/activities on rates of IMB in the presence and absence of social consequences. The specific aims were to evaluate: (1) levels of IMB when the spoon was held stationary at the child's lips during bite intervals when preferred tangible stimuli were present noncontingent upon responding vs. absent; (2) levels of IMB when social consequences (i.e., escape or attention) were provided contingent upon IMB when preferred tangible stimuli were present noncontingent upon responding vs. absent. These data may have implications related to the effectiveness and efficiency of functional analyses of IMB and subsequent treatment planning. It is not uncommon for caregivers to provide access to preferred stimuli (e.g., toys, music, TV) during meals. Evaluating combined establishing operations may more closely resemble meals within the family or home context and may help to identify the conditions under which IMB will increase or decrease during meals.

2. Methods

2.1. Participants

The participants in the current study were nine children who were admitted to an intensive feeding program to assess and treat severe food refusal. Participants included two females and seven males; ages ranged from 1-year, 7 months to 5-years, 5 months. The specific reasons for referral to the program varied for each participant but included gastrostomy tube dependence, liquid/bottle dependence, and/or food selectivity by food type or texture. Demographics of each participant are presented in Table 2.

2.2. Materials and setting

Sessions were conducted as part of an intensive treatment program that the participant attended daily (Monday through Friday, three to four times per day) for a six to eight week period. All sessions were conducted in a feeding therapy room with a one-way mirror behind which caregivers observed meals. The data presented as part of this study were data collected during functional analysis sessions relevant to each child's treatment course and were completed within three to four days.

2.3. Data collection

Trained bachelor's- and master's-level observers recorded data on target behavior either within the feeding therapy room or behind a one-way mirror. All data collectors were trained to collect data on child and feeder responses using a computerized data collection program that time stamps data in real time (Instant Data®). Observers did not interact with the child or feeder during sessions. During the paired-choice preference assessment of non-edible tangible items and food (described below), paper and pencil data were collected across trials based on approach, avoidance, and consumption responses toward the stimuli presented as described in procedures defined by Fisher and colleagues (1992). During the free operant preference assessment of tangible items (described below), data were collected measuring duration of toy/activity engagement via laptop computers. During the functional analysis, data were collected on IMB and bite acceptance (as defined below) via laptop computers.