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BRIEF REPORT

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Motivating children with feeding disorders to self-feed: An evaluation of using differential reinforcement and manipulation of establishing operations to increase self-feeding

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Abstract

Self-feeding is a behavioral cusp vital to independence, growth, and development. Previous studies demonstrate that interventions like escape extinction in the form of physical guidance are effective at increasing self-feeding in children with feeding disorders. However, these interventions may not be effective for all children. In the present study, we evaluated the effects of a treatment package that involved increasing the quality of feeder attention and access to tangibles to decrease the comparative value of escape from the self-feeding demand for two children with feeding disorders using a nonconcurrent multiple baseline design. Despite demonstrating the skills to self-feed preferred foods and consume target foods, neither child self-fed target foods independently. Following differential reinforcement with the manipulation of establishing operations, both children demonstrated improvement in self-feeding bites of target foods. In addition, caregivers were trained to implement the protocol with high procedural integrity.

KEYWORDS
behavior problems, feeding disorders, multiple baseline design, nutrition, single case design

1 | INTRODUCTION

Self-feeding is a behavioral cusp vital to independence, growth, and development. Typically developing infants begin self-feeding around 8 months of age, but children with feeding disorders may not follow this progression without intervention (Carruth et al., 2004; Volkert & Criado, 2020). Research indicates that children with feeding disorders often engage in food refusal to escape the feeding demand (Saini et al., 2019), and there is substantial evidence for behavioral interventions to decrease food refusal and increase food acceptance in a non-self format (i.e., when the child is being fed) (Sharp et al., 2016). However, once children accept food in a non-self format, they may refuse to feed themselves, and less is known about effective interventions for self-feeding.

The transition from non-self-feeding to self-feeding requires an increase in response effort, such that the child needs to orient to, scoop, and deposit the food independently. Compared to non-self-feeding, where a child can passively consume the food, self-feeding involves more active participation. Some children may demonstrate skill deficits that interfere with the ability to self-feed, while other children may have the skills to self-feed and not have the motivation to do so. For children with decreased motivation, differential reinforcement with tangible items (Peterson et al., 2015) and physical guidance (e.g., hand-over-hand prompts) combined with differential reinforcement contingencies can be effective at increasing self-feeding (Luiselli, 1993; Piazza et al., 1993). However, if motivation for access to tangible items is not as high as the motivation to escape the self-feeding demand or the child is not motivated to avoid the physical guidance procedure, then the child may continue to refuse to feed themselves.

Children who continue to engage in refusal to self-feed despite physical guidance and differential reinforcement contingencies may prefer the inherent attention associated with being fed or having a feeder assist them with self-feeding. If feeder attention becomes more motivating than escaping the food itself, physical guidance strategies may not be effective for independent self-feeding. If attention plays a role in maintaining refusal to self-feed, effective interventions are less established. Furthermore, if a child is more motivated to escape the demand of self-feeding rather than the food, response effort interventions (e.g., take one bite or be fed 5 bites) will not be effective given that choosing to consume an increased number of bites in a non-self format will still provide some escape from *independent* self-feeding.

Behavioral research outside of feeding contexts has shown that manipulating the parameters of reinforcement (e.g., magnitude, quality, and duration) for cooperation can effectively compete with escape as a reinforcer, thus decreasing problem behaviors and increasing cooperation (Kunnavatana et al., 2018; Slocum & Vollmer, 2015). Establishing operation (EO) manipulations have been shown to be effective in changing behavior by altering the value of a reinforcer to increase the effectiveness of reinforcement contingencies. For example, Davis et al. (2012) demonstrated that a child with autism learned to request novel items without direct training following two to 3 days of deprivation from those items, such that the reinforcing properties of the items potentially increased in values as a result of deprivation and evoked the emergence of untrained requests. Additional studies indicate that EO alterations produce an evocative effect on behavior (McComas et al., 2003; O'Reilly et al., 2007), but this has not been evaluated for self-feeding. For the skill of self-feeding, if attention and escape are in competition as maintaining variables for refusal, placing an EO for and increasing the value of attention may facilitate an increase in behavior to gain attention rather than escaping the feeding demand (Lalli et al., 1999).

Given the current literature on differential reinforcement and EO manipulations, a treatment package for self-feeding was developed for this study. The motivating operation of interest in the current investigation is an unconditioned EO—high-quality attention. Deprivation of attention is an unconditioned motivating operation with essential importance to children and often serves as a potent reinforcer (Shillingsburg, 2005). Based on the

research involving quality of reinforcement manipulations, we hypothesized that a differential reinforcement contingency of social attention and play with tangible items would compete with refusal to self-feed, particularly when hand-over-hand prompting was not effective at increasing self-feeding behavior. The intervention package included an antecedent strategy of placing an EO for high-quality social attention when the participants engaged in refusal to self-feed. To our knowledge, EO manipulation of attention to improve self-feeding has not yet been evaluated. The present experiment evaluated the effects of a package intervention that manipulated the quality of attention and escape from the self-feeding demand to increase self-feeding for two participants.

2 | METHOD

2.1 | Participants

All procedures were performed in accordance with the ethical standards of the institutional review committee. The two children who participated in the study had a diagnosis of avoidant/restrictive food intake disorder (American Psychiatric Association [APA], 2013). Each child participated in an intensive day-treatment feeding program to target reductions in inappropriate mealtime behavior (e.g., batting at the spoon) and increase consumption of target purees (i.e., blended table food). The self-feeding evaluation began after each child demonstrated reliable consumption of 16 target purees without inappropriate mealtime behavior when fed by their caregiver for at least 1 week. At the time of the evaluation, both children self-fed a limited variety of preferred foods but refused to self-feed the 16 target purees. The first author obtained informed consent orally from the children's caregivers following completion of the evaluations to report the results of the clinical feeding evaluations retrospectively.

Inclusion criteria were that the child was (a) between the ages of 8 months and 10 years, (b) determined to be safe for oral feeding by a speech-language pathologist, and (c) medically appropriate for intensive feeding treatment based on an evaluation by a physician. Exclusion criteria were that the child was (a) unsafe for oral feeding, (b) not medically appropriate for intensive feeding treatment, and (c) did not meet the inclusion criteria. A registered dietitian reviewed a food log to assess whether the child met their calorie, fluid, and nutritional needs.

Sally was a White, typically developing 3-year-old female. Before treatment, Sally received 50% of her daily calorie needs and 92% of her fluid needs via oral consumption of a limited number of orange prepackaged pureed foods (e.g., Gerber mac and cheese, Gerber sweet potatoes) and whole milk. Sally consumed an excessive amount of vitamin A causing carotenosis and demonstrated significant micronutrient deficiencies. A functional analysis of inappropriate mealtime behavior conducted by a trained therapist upon enrollment in the feeding program determined escape functioned as a reinforcer for inappropriate mealtime behavior. Sally reliably consumed a variety of target purees when fed by a caregiver following exposure to function-based treatment (i.e., non-removal of the spoon). Prior to the study, Sally had a history of consistently self-feeding preferred orange prepackaged pureed foods using a spoon. Her expressive and language skills were developmentally and age appropriate. She was observed to engage in reciprocal communication and play with her caregiver and a therapist.

Vance was a White, 5-year-old male diagnosed with autism spectrum disorder. Before treatment, Vance received 89% of his daily calorie needs and 22% of his fluid needs via oral consumption of mostly preferred carbohydrate snacks, fruit, yogurt, and water. Vance demonstrated significant micronutrient deficiencies. A functional analysis of inappropriate mealtime behavior conducted by a trained therapist determined escape, attention, and access to tangibles functioned as reinforcers for inappropriate mealtime behaviors. Vance demonstrated reliable consumption of a variety of target purees when fed by a caregiver following exposure to function-based treatment (i.e., non-removal of the spoon with differential reinforcement). Prior to the study, Vance had a history of consistently self-feeding preferred foods at a variety of textures (e.g., strawberries and pizza) using his fingers. His expressive and receptive language skills were delayed although his receptive language skills were greater than his expressive language skills. He was observed to communicate with single words and gestures and engaged in limited reciprocal play (e.g., dancing and physical touch) with his caregiver and a therapist.

2.2 | Settings and materials

Trained therapists and caregivers served as feeders and conducted meals in clinic rooms at a university-based medical facility. Each room was connected to a booth with one-way observation and two-way audio and sound monitoring. Rooms included age-appropriate seating for the child, feeding utensils, a table and chair, and a food scale. During baseline and treatment for the self-feeding evaluation, feeders presented a random rotation of the 16 pureed target foods (at least 4 different purees per meal) mastered during day treatment.

2.3 | Response measurement

Trained observers used laptop computers and DataPal 1.0 software (i.e., a beta version of BDataPro; Bullock et al., 2017) or Excel spreadsheet software to record non-self active acceptance, self-fed active acceptance, self-fed nonactive acceptance, and procedural integrity. Observers scored the occurrence of *non-self active acceptance* when the child opened their mouth in the absence of crying or the child opened their mouth and leaned forward while crying and the entire bite or drink passed the plane of the wet vermillion of the child's lips and was deposited into the child's mouth within 5 s of presenting the bite to the child's lips. Observers scored the occurrence of *self-fed active acceptance* when the child deposited the bite(s) presented within arm's reach on the table in their mouth without physical guidance within the prescribed time interval (i.e., 20 s per bite presented on a loaded spoon and 30 s per bite presented in a bowl with required scooping). Observers scored the occurrence of *self-fed nonactive acceptance* when the child deposited the bite(s) presented within arm's reach on the table in their mouth without physical guidance after the prescribed time interval (i.e., after 20 s per bite presented on a loaded spoon and after 30 s per bite presented in a bowl with required scooping).

2.4 | Procedural integrity

Observers measured the correct procedure for 100% of sessions across treatment evaluations. Observers scored the correct procedure for a trial when the feeder (a) presented the utensil at the participant's lips or on the table in front of the participant, (b) placed the utensil with the correct bolus in front of the participant, (c) performed hand-over-hand guidance when the protocol instructed after 8 s if the participant did not touch the utensil or take the bite(s), (d) re-presented the food within 3 s of an expulsion (i.e., spitting out the bite), and (e) provided correct attention (e.g., 30 s interaction or turning 180° away from the child). The percentage of correct procedure was calculated by dividing the number of bite presentations with the correct procedure by the total number of bite presentations in a session and converting the number to a percentage. Observers did not score the correct procedure if the feeder did not implement or stopped implementing the procedure as described above. Correct procedure was high for Sally (M = 98%; range, 0%–100%) and for Vance (100%). For Sally, the primary observer scored 0% correct procedure for one session. This was the first session in which the caregiver implemented to protocol without therapists in the room to assist and provide feedback.

2.5 | Interobserver agreement

Two observers simultaneously and independently collected data on a mean of 34.8% and 25% of trials for Sally and Vance, respectively. Trial-by-trial agreement was calculated by dividing the number of trials in agreement (defined as both observers scoring the occurrence or nonoccurrence of acceptance) by the total number of trials, multiplying that number by 100, and converting the ratio to a percentage. Mean agreement for self-fed active acceptance was high

for Sally (*M* = 98%; range, 20%–100%) and Vance (100%). For Sally, one session yielded the ideal percentages lower than IOA, but the overall agreement was high. Mean agreement for correct procedure for Sally was 100% and only one observer collected procedural integrity data for Vance.

2.6 | Experimental design

We conducted treatment evaluations with purees for Sally and Vance using a nonconcurrent multiple baseline design across participants. A multiple baseline design across two participants allowed for the identification of all baseline logic elements (i.e., prediction, affirmation of the consequent, verification, and replication), thus providing adequate evidence to draw conclusions about the functional relation between the treatment package and the participants' self-feeding behavior (Carr, 2005). An ABC design was used for each child where A was baseline, B was hand-over-hand physical guidance, and C was differential reinforcement of self-feeding plus the establishing operation (EO) manipulation.

2.7 | General procedures

Feeders conducted multiple five-trial sessions in meals with approximately 1 min between sessions so data collectors and feeders could prepare for the next session. The number of sessions per meal ranged from two to six.

2.8 | Preference assessment

For Sally, the feeders used three of the highest-ranked items identified in a paired-stimulus preference assessment (Fisher et al., 1992) to include in a brief preference assessment before each meal. Feeders presented the three items and instructed Sally to select one. For Vance, the feeders instructed him to select an item that was available in the clinic room before the meal. Vance was allowed to vocally request a change of items between bite presentations.

2.9 | Treatment evaluation

2.9.1 | Baseline

For each trial, the feeder presented Sally with one bite of pureed food on a small maroon spoon on a plate and Vance with two bites (one target bite plus an additional bite to assist with scooping) of pureed food using an empty small maroon spoon in a bowl. The feeder presented the bite(s) within arm's reach of the child and stated "Take your bite." If the child independently accepted the bite(s) within the prescribed time allotted, the feeder delivered behavior-specific praise "Good job taking your bite!" and removed the feeding utensil(s). If the child accepted the bite and pocketed the food in their mouth upon the following bite presentation, the feeder reminded the child to swallow. The feeder provided no programmed consequences for inappropriate mealtime behavior or bite expulsion. If the child did not accept the bite, the feeder removed the plate or bowl once 30 s elapsed and presented the next trial.

2.9.2 | Treatment: Hand-over-hand physical guidance

The purpose of this phase was to implement hand-over-hand physical guidance as a type of escape extinction for Sally and Vance's refusal to self-feed. Hand-over-hand physical guidance was selected because escape extinction (i.e.,

nonremoval of the spoon) was identified as the effective treatment for both children to increase the consumption of a variety of target foods. Following the presentation of the bite(s) and a vocal instruction "Take your bite(s)", if the child did not initiate self-fed active acceptance (i.e., touching the utensil and starting to bring the utensil to the mouth) within 8 seconds of the presentation, the feeder placed the child's hand on the utensil and covered the child's hand with their own hand. The feeder then facilitated the deposit of the bite by gently guiding the child's hand with the utensil to the child's lips. Once the utensil reached the child's lips, the feeder deposited the bite and removed the feeding utensil once the child accepted the bite. If the child engaged in inappropriate mealtime behavior or negative vocalizations, the feeder provided no programmed consequences for the disruption and continued to present the bite. If the child accepted and expelled the bite, the feeder re-presented the bite with hand-over-hand physical guidance. If the child accepted the bite and pocketed the food in their mouth (i.e., packing) when the feeder presented the next trial, then the feeder reminded the child to swallow and gave the child five additional seconds to swallow the bite before presenting the next bite.

2.9.3 | Treatment: DRA of self-feeding plus EO manipulation

The purpose of this phase was to use differential attention from the feeder and differential access to tangibles to increase the value of self-feeding over being fed. Once self-fed active acceptance of one bite reached clinically acceptable levels (i.e., 80%–100%) based on visual inspection of the graphs, the feeder gradually increased the number of bites for each child. Before increasing the bite number for Sally, the feeder required Sally to scoop her bite. Vance was required to scoop and self-feed single bite presentations at the start of the evaluation because he self-fed pre-loaded bites without intervention and scooping was the next step to increasing his independent self-feeding before increasing the number of bites.

Pre-meal play

At the start of the meal, the child had 2 minutes to play at the table with the feeder to build their motivation for access to play. Play was defined as continuous and noncontingent access to a preferred tangible and positive feeder attention.

Non-removal of the spoon with differential reinforcement

The purpose of this phase was to expose the child to the positive reinforcement contingencies associated with consumption and expose the child to the session foods in a non-self format before instructing them to self-feed the same foods. For each trial, the feeder paused access to play by blocking or moving the preferred item out of the child's reach, but still within the child's line of sight, and then presented the bite to the child's lips. The feeder instructed, "Take your bite(s), and we can keep playing." If the child accepted the bite (s), the feeder resumed access to play for 30 s and then moved on to the next bite. If the child expelled the bite, the feeder re-presented the bite to the child's lips. If the child did not accept the bite within 5 s, the feeder continued to hold the bite at the child's lips until 5 min elapsed or the child accepted the bite. The feeder checked that the child swallowed the bite at the next bite presentation. Once the child consumed 80%–100% of five consecutive bites in a non-self format, the feeder presented the bites in a self-feeding format.

Differential reinforcement with EO manipulation

The feeder paused access to play and presented the bite(s) in front of the child. The feeder instructed, "If you take your bite(s), we can continue to play." If the child self-fed the bite(s) within the prescribed time interval (e.g., 30 s per bite), the feeder provided behavior-specific praise and access to play for 30 s. If the child did not initiate self-feeding within 8 s, the feeder started to play with the toys themselves, such that the child was reminded of the presence of the toys. If the child initiated taking a bite(s) by touching the utensil or bringing the utensil to the lips at any moment

during the bite presentation, the feeder provided behavior-specific praise and reminded the child that play would continue once the bite(s) was taken. If the child did not take the bite(s) within 30 s of the feeder initiating play with the toys without the child, the feeder discontinued engaging in the items, turned 180° away from the child, and restated the rule. If the child made closer approximations to taking the bite(s) (e.g., touching the spoon), the feeder turned toward the child, provided behavior-specific praise, and re-initiated playing with the toys again for 30 s. This process would continue until the child self-fed and consumed the bite(s) or the child met the session cap. Once the child self-fed the target number of bite(s) within the session cap, the feeder provided access to 30 s of play. That is, the child received access to play with the caregiver and toys for 30 s contingent on self-feeding all the presented bites within the session cap. If the child did not take the bite(s) within the session cap, a therapist implemented non-removal of the spoon. The therapist presented the bite(s) to the child's lips at a natural pace (~10–15 s between bites) without providing praise for taking bites. For Vance, the session cap was reduced to 15 min due to shorter meal lengths in the partial day-treatment program. Vance met the 15 min session cap on two occasions and Sally never met the 45 min session cap.

2.10 | Caregiver training

Once Sally and Vance met stable levels of self-fed active acceptance, therapists initiated training with their caregivers by giving immediate in-vivo feedback. Sally's mother observed meals in the session room and then fed the meals with the therapists observing from the booth. Vance's mother observed a meal in the session room before feeding the meal with therapists observing from inside the room.

3 | RESULTS

Figure 1 displays the results of Sally's self-feeding treatment and shows data for active acceptance of purees. During baseline, the percentage of self-fed acceptance was zero. Sally remained seated in front of the plate without making any directed movements toward the food (i.e., passively refused) until the time elapsed. Despite the introduction of hand-over-hand physical guidance, the percentage of self-fed active acceptance remained at zero. Following the introduction of differential reinforcement of self-feeding with an EO manipulation, the percentage of active self-fed active acceptance for one bite (*M* =96%; range: 80%–100%) increased. Self-fed active acceptance remained high when the number of bites increased (*M* = 89%; range: 0%–100%). Following the introduction of Sally's caregiver as a feeder, self-fed active acceptance decreased for one session and then returned to high levels (*M* =94%; range: 50%–100%). Sally did not engage in negative vocalizations, expulsions, or packing behaviors during the evaluation. Sally did not engage in inappropriate mealtime behavior during baseline or physical guidance procedures but did engage in inappropriate mealtime behavior for 4% of the therapist-fed sessions and 0% of the caregiver-fed sessions with the treatment package (data available upon request).

Figure 1 also displays the results of Vance's self-feeding treatment and shows data for percentage of trials with active acceptance of purees. The percentage of trials with self-fed active acceptance during baseline for scooping and self-feeding one bite was zero. Similar to Sally, Vance remained seated in front of the plate without making any directed movements toward the food (i.e., passively refused) until the time elapsed. When hand-over-hand physical guidance was added, the percentage of trials with self-fed active acceptance remained at zero. Following the introduction of self-feeding with an EO manipulation, the percentage of trials with self-fed active acceptance increased (*M* = 87%; range: 0%–100%). Vance continued to self-feed the single bites, represented by the maintenance phase, until the initiation of caregiver training. Following caregiver training, the percentage of trials with self-fed active acceptance maintained at stable levels of 100%. Vance did not engage in negative vocalizations, expulsions, or packing behaviors during the evaluation. Vance engaged in inappropriate mealtime behavior during baseline and physical

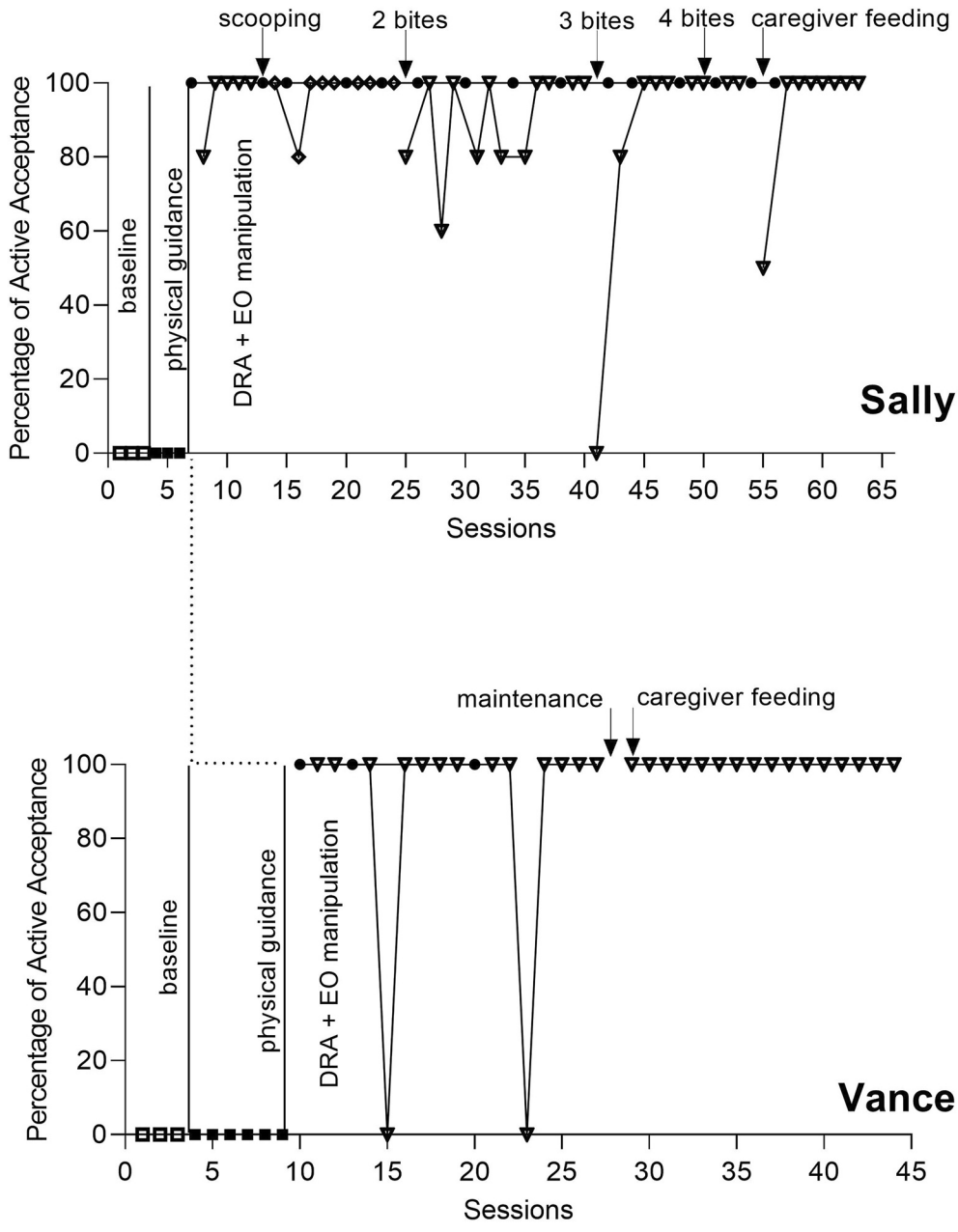

FIGURE 1 Effects of treatment on active acceptance. The figure displays the percentage of active acceptance for Sally and Vance. The closed circles represent sessions where feeders presented bites in a non-self-feeding format, and the open triangles represent sessions where feeders presented the bites in a self-feeding format.

guidance procedures. Moreover, Vance engaged in inappropriate mealtime behavior for 20% of the therapist-fed sessions and 0% of the caregiver-fed sessions with the treatment package (data available upon request).

4 | DISCUSSION

Previous studies have demonstrated that interventions, such as differential reinforcement of alternative behavior with physical guidance (Piazza et al., 1993), can be effective in teaching self-feeding. However, for some children, such as Sally and Vance, they may not be. For both, the treatment of escape extinction in the form of hand-over-hand physical guidance did not result in increased self-fed active acceptance or decreased refusal. We hypothesized that both participants preferred physical guidance, were motivated by escape from independent self-feeding, or both. Self-fed active acceptance only increased after implementing the evaluated treatment package. Additionally, caregivers of both participants were trained to implement the protocol with high procedural integrity. These results indicated that the evaluated treatment package was efficacious at increasing self-feeding for both children without providing physical guidance.

Several questions regarding this treatment package remain of interest, such as the role of EO manipulations. There are multiple occasions in the procedures in which EO manipulations are incorporated. The first EO manipulation was the termination of the 2 min of play with the feeder. After providing noncontingent access to toys and attention for a brief period, the discontinuation of play placed the child in a state of deprivation. The state of deprivation likely increased the value of toys and attention. This conceptualization is similar to procedures for placing an EO in functional analysis methodologies implemented outside of feeding contexts (Iwata & Dozier, 2008). The second EO manipulation was the feeder playing with toys independently, increasing the value of access to the toys and play with the feeder. The third EO manipulation was the feeder turning 180° away from the child. This further increased the deprivation of attention, increasing the value of access to attention. Due to the immediate level change in self-feeding, it is likely that antecedent variables influenced responding. We hypothesize that the EO manipulations resulted in a behavior-altering effect evoking self-feeding for both children.

Another important consideration of the treatment package is the conceptualization of punishment. Removing access to the toys and/or feeder attention contingent on the absence of self-feeding could be conceptualized as punishment if the absence of self-feeding is considered to meet the definition of a behavior. We considered the ethical implications of implementing these procedures in the context of how severe each child's feeding difficulties were and how intrusive it would be for each child to not contact effective procedures. For Sally and Vance, being fed by an adult was not age or developmentally appropriate, and caregivers expressed a desire for procedures that minimized the need for them to feed their children using a non-self format or with physical guidance. With this procedure, caregivers could sit alongside their child during a meal without needing to feed them as often as they would have without effective intervention for self-feeding.

Unlike prior studies (Peterson et al., 2015; Piazza et al., 1993), we did not find that hand-over-hand physical guidance increased self-feeding or decreased refusal. That is, hand-over-hand did not function as punishment for refusal, and it was not effective at increasing self-feeding. Instead, Sally and Vance remained seated in front of the bite (i.e., passively refused) for 8 s until the therapist-initiated hand-over-hand physical guidance. Sally and Vance accepted and consumed all the bites presented to them with physical guidance. While it is possible that self-fed acceptance could have increased with continued implementation, we chose not to continue with hand-over-hand physical guidance because we hypothesized that it would remain ineffective. Consistent with this hypothesis, Sally and Vance began to self-feed the bites independently and consume the bites more quickly despite having the option to delay consumption of the bite. Although we did not verify if physical guidance was a preferred presentation method, this is a potential hypothesis that should be studied further as previous studies have shown that physical guidance contingent on noncompliance may function as reinforcement (Kern et al., 2002). Future studies should also consider implementing a DRA instead of physical guidance procedures as an initial treatment for self-feeding to demonstrate if a DRA alone would be effective before implementing more intrusive procedures.

In the current study, we elected to use non-self presentation only after an extended period of refusal (15 min for Vance and 45 min for Sally), which contradicts the large body of research demonstrating the prevalence of escape-maintained refusal behavior (Piazza et al., 2003). Escape extinction has strong empirical support but can

require resources not always available to clinicians or caregivers. We hypothesized the extended time cap allowed for the building of the motivation for adult attention and minimized the value of escape from the self-feeding demand. The evaluated treatment may provide an option for clinicians and caregivers that *minimizes* the regular use of escape extinction, potentially increasing the social validity of an intervention, such as EO manipulation. During the physical guidance condition, Sally and Vance contacted escape extinction with every bite.

Limitations and additional areas of future research should also be noted. Most importantly, although functional control was demonstrated with a multiple baseline across two participants, future replications are warranted across additional participants and contexts to further evaluate if effects will generalize to more children for self-feeding. Furthermore, given that this initial evaluation consisted of a treatment package that included multiple treatment components, we are not able to conclude which individual components or combination of components were necessary to increase self-feeding. For example, it would be advantageous to evaluate whether the initial presentation of non-self bites or the DRA is necessary and whether they could be successfully faded out. Therefore, future studies should include a component analysis to identify the effective components of the treatment package. Additionally, parents were able to implement the protocol with high fidelity, which is especially important when planning to transition treatment to the home setting. Given that caregiver buy-in is vital to the generalization of treatment to the home or other settings, future studies could examine caregiver feasibility of and satisfaction with this particular self-feeding intervention. Future studies may also consider including social validity measures from the child and therapist in addition to the caregiver. This may be especially important as lengthy time caps may not be feasible for caregivers to continue long-term and the intervention may be best suited as an initial treatment procedure to establish success with self-feeding target foods. Overall, for the children in the current study, the evaluated treatment package was efficacious and efficient in increasing self-feeding in children who did not respond to other evidenced-based treatment options. Although these initial findings are positive, additional studies are warranted.

CONFLICT OF INTEREST STATEMENT

The authors declare no conflicts of interest regarding this manuscript.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

ETHICS STATEMENT

All procedures were performed in accordance with the ethical standards of the institutional review committee.

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