



Contents lists available at ScienceDirect

Learning and Motivation

journal homepage: www.elsevier.com/locate/I&M



A comparison of flipped-spoon presentation and redistribution to decrease packing in children with feeding disorders

Kathryn H. Stubbs^a, Valerie M. Volkert^{a,b,*}, Emily Kate Rubio^{a,c}, Elissa Ottinger^a

^a Marcus Autism Center, United States

^b Emory University School of Medicine, United States

^c Georgia State University, United States

ARTICLE INFO

Article history:

Received 17 October 2016

Received in revised form 7 March 2017

Accepted 7 March 2017

Available online xxx

Keywords:

Feeding disorders

Flipped spoon

Food refusal

Packing

Redistribution

ABSTRACT

For children with feeding disorders, nonremoval procedures combined with reinforcement are often used by practitioners to treat initial food refusal (Volkert et al., 2016; Volkert & Piazza, 2012). However, this treatment may not always be sufficient to increase food consumption because problematic behaviors such as packing (holding food in the mouth) or expulsion emerge. Antecedent- and consequence-based interventions have both been effective to decrease packing (or increase mouth clean) in children with feeding disorders. Depositing the bite using a flipped spoon or Nuk upon presentation has been shown to increase mouth clean (Sharp, Harker et al., 2010; Wilkens et al., 2014), and redistribution and/or swallow facilitation have been effective to decrease packing (Gulotta et al., 2005; Volkert et al., 2011). To our knowledge, flipped-spoon presentation and redistribution have not been directly compared to reduce packing, and this was the aim of the current study.

© 2017 Elsevier Inc. All rights reserved.

1. Introduction

A pediatric feeding disorder occurs when a child does not consume enough volume of food to meet caloric needs and/or enough variety of food to meet nutritional needs. Feeding disorders are associated with a number of medical sequelae such as failure to thrive, dehydration, and vitamin or mineral deficiencies (Volkert, Patel, & Peterson, 2016). The etiology of feeding disorders is complex but may involve one or more factors including medical conditions, anatomical abnormalities, oral motor skill deficits, and behavioral or environmental factors (Silverman, 2010). Therefore, the assessment and treatment of pediatric feeding disorders warrants a multidisciplinary team of professionals, which often includes a combination of medicine, nutrition, speech pathology, occupational therapy, and psychology (Silverman, 2010). However, behavioral intervention has the most documented empirical support in the treatment of pediatric feeding disorders (Sharp, Jaquess, Morton, & Herzinger, 2010).

Children with pediatric feeding disorders often engage in multiple topographies of inappropriate mealtime behavior when presented with food, which may include behaviors that interfere with bite deposit (e.g., turning head away, pushing spoon away, clenching teeth) or swallowing (e.g., expelling, packing, vomiting). Behavioral intervention for pediatric feeding

* Corresponding author at: Marcus Autism Center, 1920 Briarcliff Road, Atlanta, GA 30329, United States.
E-mail address: valerie.volkert@choa.org (V.M. Volkert).

disorders often initially involves a combination of nonremoval of the spoon, or escape extinction, as well as reinforcement for various appropriate mealtime behaviors. These treatments have been shown to increase acceptance of food and to decrease inappropriate mealtime behavior such as head turning or pushing away the spoon (e.g., Sharp, Jaquess et al., 2010; Volkert, Patel, & Peterson, 2016; Volkert & Piazza, 2012).

Once acceptance has been established using nonremoval procedures and reinforcement, other problematic behaviors that interfere with swallowing, such as expulsion and packing, may emerge (Sevin, Gulotta, Sierp, Rosica, & Miller, 2002). Swallowing is often referred to as mouth clean and is typically defined as the mouth being clear of all food, with the exception of food the size of one pea or less, 30 s after bite deposit (Sharp, Jaquess, Morton, & Herzinger, 2010). The term latency to clean mouth is also used in the literature to describe the amount of time it takes the child to swallow the bite after it is accepted (Gulotta, Piazza, Patel, & Layer, 2005). Packing interferes with mouth clean and involves holding or pocketing food in the mouth. Packing can reduce consumption by leading to longer meal durations, decreased caloric intake, and increased risk for aspiration (Gulotta et al., 2005). Packing can occur with a variety of textures, from smooth or pureed foods to table-texture foods and even liquids. In the literature, packing is typically defined as holding food greater than the size of one pea in the mouth for longer than 30 s after the bite is deposited (e.g., Gulotta et al., 2005; Sevin et al., 2002).

Several interventions have been evaluated to decrease packing in children with feeding disorders. These interventions have included the simultaneous presentation of preferred and non-preferred foods on the same spoon (Buckley & Newchok, 2005), reducing texture to jarred baby food or pureed food (Patel, Piazza, Layer, Coleman, & Swartzwelder, 2005), and using a liquid or pureed-food chaser either immediately or after a programmed delay following bite presentation (Vaz, Piazza, Stewart, Volkert, & Groff, 2012).

Redistribution is a consequence-based procedure used in the treatment of packing which involves gathering food from the mouth with a utensil sometime after the bite is deposited and placing it midline on the tongue. Redistribution is often implemented with a tool called a Nuk, which is an infant tooth brush with soft rubber bristles (Gulotta et al., 2005; Sevin et al., 2002); however, a rubber-coated baby spoon has also been used in some cases (Volkert, Paz, Piazza, Frese, & Barnett, 2011). The exact placement of the bolus has varied across studies with some placing the bolus on the middle of the tongue (Gulotta et al., 2005) and others using posterior placement (Volkert et al., 2011). Other variations in the procedure include whether the bolus is deposited with the use of pressure (on the posterior of the tongue), also known as swallow facilitation (Volkert et al., 2011).

To our knowledge, Sevin et al. (2002) were the first to describe the implementation of redistribution in the treatment of packing. This study involved one participant, and the feeder implemented the redistribution procedure with a Nuk every 15 s after the bite was deposited until the participant swallowed the bite. Lower percentages of packing were observed when the redistribution contingency was in place than during baseline in which the trial was terminated for 30 s in response to packing. Gulotta et al. (2005) sought to replicate and extend the findings from the previous study with additional participants. The implementation of the redistribution procedure was similar in that these researchers used a Nuk to gather the pocketed food and place it back on the tongue; however, this was done at various time intervals (immediate, 15 s, and 30 s) across the four participants to determine the effect on packing and latency to clean mouth. Results were similar to the previous study for two of the participants in that implementation of the redistribution procedure was associated with lower percentages of packing. For the other two participants, percentages of packing remained moderate to high during redistribution; however, latency to a clean mouth was lower during trials with redistribution than during baseline.

Volkert et al. (2011) found similar outcomes when implementing redistribution (with swallow facilitation) with a flipped spoon rather than a Nuk with two participants when any food pea-sized or larger was visible in the mouth either 15 or 20 s after bite acceptance. The feeder used the spoon to collect the food remaining in the mouth, presented the spoon midline, rotated 180°, and then dragged the spoon on the tongue and out of the mouth while applying gentle downward pressure. The feeder presented foods at a wet ground (pureed food with small chunks) or chopped texture and ensured the child had fully masticated the chopped foods prior to implementing redistribution. Levin, Volkert, and Piazza (2014) demonstrated that some children require multicomponent treatments to address packing. Both participants in their analysis received a combination of redistribution, swallow facilitation, and use of a chaser to reduce packing. The authors conducted redistribution (with swallow facilitation) with a Nuk for one participant and with a flipped spoon for the second participant. In both cases, use of redistribution was contingent on the child having food larger than the size of one pea within the mouth 15 s after the bite was deposited. This combination of interventions resulted in decreased packing across both participants.

Redistribution as described above is conceptualized as a consequence-based strategy when applied contingent on the child holding food in the mouth. In contrast, researchers have more recently evaluated the Nuk and flipped spoon as an antecedent-based strategy or bite-placement (or presentation) modification to increase mouth clean in children with feeding disorders who displayed expulsion rather than packing (Sharp, Harker, & Jaquess, 2010; Sharp, Odom, & Jaquess, 2012; Wilkens et al., 2014). Sharp, Harker et al. (2010) conducted a presentation assessment comparing upright-spoon, Nuk, and flipped-spoon presentations while evaluating the primary outcome variables of mouth clean and expulsion. Both Nuk and flipped-spoon presentation of the bolus were superior to the upright spoon for both mouth clean and expulsion; however, neither outcome variable was considered in target range clinically (e.g., 80% or above for mouth clean). Two studies have evaluated use of the flipped spoon for presenting and re-presenting expelled bites (Rivas, Piazza, Kadey, Volkert, & Stewart, 2011; Sharp, Odom, & Jaquess, 2012). Re-presentation for expulsion involved placing expelled food back into the mouth using a flipped spoon and also involved placing a pacifier in the participant's mouth for the Rivas et al. (2011) participant.

Download English Version:

<https://daneshyari.com/en/article/7275793>

Download Persian Version:

<https://daneshyari.com/article/7275793>

[Daneshyari.com](https://daneshyari.com)