



A Systematic Review and Meta-Analysis of Intensive Multidisciplinary Intervention for Pediatric Feeding Disorders: How Standard Is the Standard of Care?

William G. Sharp, PhD^{1,2}, Valerie M. Volkert, PhD^{1,2}, Lawrence Scahill, MSN, PhD^{1,2}, Courtney E. McCracken, PhD¹, and Barbara McElhanon, MD^{1,2}

Objective To assess models of care and conduct a meta-analysis of program outcomes for children receiving intensive, multidisciplinary intervention for pediatric feeding disorders.

Study design We searched Medline, PsycINFO, and PubMed databases (2000-2015) in peer-reviewed journals for studies that examined the treatment of children with chronic food refusal receiving intervention at day treatment or inpatient hospital programs. Inclusion criteria required the presentation of quantitative data on food consumption, feeding behavior, and/or growth status before and after intervention. Effect size estimates were calculated based on a meta-analysis of proportions.

Results The systematic search yielded 11 studies involving 593 patients. Nine articles presented outcomes based on retrospective (nonrandomized) chart reviews; 2 studies involved randomized controlled trials. All samples involved children with complex medical and/or developmental histories who displayed persistent feeding concerns requiring formula supplementation. Behavioral intervention and tube weaning represented the most common treatment approaches. Core disciplines overseeing care included psychology, nutrition, medicine, and speech-language pathology/occupational therapy. The overall effect size for percentage of patients successfully weaned from tube feeding was 71% (95% CI 54%-83%). Treatment gains endured following discharge, with 80% of patients (95% CI 66%-89%) weaned from tube feeding at last follow-up. Treatment also was associated with increased oral intake, improved mealtime behaviors, and reduced parenting stress.

Conclusions Results indicate intensive, multidisciplinary treatment holds benefits for children with severe feeding difficulties. Future research must address key methodological limitations to the extant literature, including improved measurement, more comprehensive case definitions, and standardization/examination of treatment approach. (*J Pediatr* 2017;181:116-24).

See editorial, p 7

Pediatric feeding disorders involve severe disruptions in nutritional and caloric intake exceeding ordinary variations in hunger, food preference, and/or interest in eating.¹ Feeding problems of this magnitude affect as many as 5% of children and represent one of the most frequent concerns in pediatric settings.^{2,3} Avoidant/restrictive intake disorder (ARFID), the broader psychiatric diagnosis for feeding disorders, requires failure to meet nutrition and/or energy needs as the result of avoidance or restriction of oral intake of food.⁴ Clinical manifestations of ARFID include faltering growth, significant nutritional deficiencies, and/or reliance on enteral feeding or oral nutritional supplementation to meet energy needs. Infants and children with feeding disorders also may have impaired cognitive and emotional development,⁵ compromised immune functioning, and may require recurrent hospitalizations.⁶ Severe feeding difficulties also contribute to parental stress, anxiety, and depression, as well as fear of social stigmatization due to unconventional feeding practices.^{6,7}

Estimates suggest 40%-70% of children with chronic medical concerns (eg, congenital or acquired respiratory, cardiac, and gastrointestinal [GI] problems) experience feeding difficulties.³ These medical problems may promote conditioned food aversion by pairing unpleasant consequences, such as pain, nausea, and/or fatigue, with eating.^{1,8} Resolution of underlying medical concerns, however, may not improve oral intake because of persistent, disruptive mealtime behaviors (eg, intense tantrums, tearful protests) aimed at avoiding contact with food.⁹ In response to these behaviors, caregivers may coax, comfort, and/or

ARFID	Avoidant/restrictive food intake disorder
BMI	Body mass index
ES	Effect size
GI	Gastrointestinal
NRS	Nonrandomized studies
RCTs	Randomized controlled trials

From the ¹Department of Pediatrics, Emory University School of Medicine, Atlanta, GA; and ²Marcus Autism Center, Atlanta, GA

The authors declare no conflicts of interest.

0022-3476/\$ - see front matter. © 2016 Elsevier Inc. All rights reserved.

<http://dx.doi.org/10.1016/j.jpeds.2016.10.002>

reprimand and then understandably remove food and end the meal. Consequently, the child learns to avoid food by engaging in disruptive behaviors.¹ As a result, meals increasingly involve little or no consumption, and a vicious cycle takes hold. Limited exposure to food circumvents key sensory, developmental, physiological, and social processes associated with eating, which further erodes an already fragile parent-child mealtime relationship. Without intervention, this cycle leads to continued refusal, inadequate nutrition, and the need for artificial supports (eg, tube feeding) to support growth.¹

Expert consensus increasingly recognizes intensive multidisciplinary intervention at day hospital programs and inpatient settings as the standard of care for children with complex feeding problems.^{1,3} This level of support allows monitoring for potential complications (eg, aspiration, severe weight loss, and/or allergic reactions) associated with the introduction of new food types and textures, advancement of oral volumes, and reduction of enteral nutrition among children with little or no experience eating. Previous reviews consistently report positive effects associated with multidisciplinary intervention.^{1,3,6} The evidence base, however, primarily involves single-case research and nonrandomized studies (NRS) with few randomized controlled trials (RCTs). Lukens and Silverman³ identified 13 studies (11 NRS and 2 RCTs) published during a 15-year period (1998-2013). Ten of the 13 studies involved multidisciplinary treatment at day treatment or inpatient hospital programs; all reported positive outcomes associated with intervention. Support for intensive intervention, however, was derived solely from NRS.

Despite provisional support for the treatment of feeding disorders at inpatient and day treatment programs, important questions remain regarding this method of treatment delivery. Notably, previous reviews focus on behavioral¹ and/or psychological intervention³ for ARFID implemented in a range of settings (eg, outpatient, inpatient) spanning various therapeutic approaches (eg, parent education groups, therapist-directed protocols). Research, however, has yet to exclusively examine intensive multidisciplinary intervention. The current review sought to survey the medical literature regarding treatment of pediatric feeding disorders at inpatient and day treatment programs, summarize treatment models and outcome measures, and evaluate the evidence with the use of both descriptive and meta-analytic procedures.

Methods

Following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses statement, we searched Medline, PsychINFO, and PubMed (January 2000 and December 2015) and conducted ancestral and online searches in peer-reviewed, English-language journals for eligible studies, cross-checking search results and removing overlapping citations. The search parameters (Table 1; available at www.jpeds.com) included combinations of key words regarding the patient population (eg, “feeding disorder,” “failure to thrive”) paired systematically with possible indicators of the treatment approach/setting (eg, “multidisciplinary treatment,” “tube weaning”). In addition, we

viewed references from identified articles and previous systematic reviews.^{1,3}

Selection criteria required articles meet the following criteria: the sample involved a pediatric population (birth to 18 years of age) with ARFID, as evidenced by dependence on enteral feeding or oral nutritional formula supplementation; the study evaluated multidisciplinary intervention at a day treatment or inpatient hospital setting on a group level (vs case report); intervention primarily targeted improving the volume of solid food intake vs concerns regarding dietary variety (ie, food selectivity); and the study presented pre/postintervention data on food consumption (eg, grams consumed, use of feeding tube), feeding behavior (eg, acceptance of food), and/or growth status either descriptively (eg, frequencies, percentages) or statistically (eg, *P* values, *t* scores). Given the recognized lack of RCTs in the field,^{1,3} we included NRS and RCTs to examine group effects over time. Finally, this review excluded studies that investigated the treatment of eating disorders (eg, anorexia nervosa, bulimia nervosa), which involve a different etiology and treatment approach.⁴ Two authors (W.S., V.V.) independently searched the literature, reviewed and screened potential articles, and reached consensus on final inclusion (Figure 1; available at www.jpeds.com).

Data Extraction, Variables Coded, and Reliability

Data extraction involved a standardized protocol to code eligible studies (available on request). Variables captured during this process included study descriptors (eg, experimental design, treatment setting), patient demographic variables (eg, sample size, age, sex), treatment approach (eg, duration, disciplines involved), outcomes measures, and summary of findings. The research team independently double-coded all data extracted during the review process. The double-entered data allowed for the calculation of percent agreement. Coder agreement was 89% (range 80%-99%), exceeding the 80% acceptable standard of agreement recommended during quantitative synthesis of research.¹ To further ensure the accuracy, we reached consensus on all areas of discrepancy highlighted during the inter-rater analysis.

Data Analyses

We first analyzed extracted data on a descriptive level, summarizing patient characteristics, treatment techniques, contributing disciplines, and reported outcomes. This level of data analysis involved summary statistics (percentages, means) to identify commonalities and differences in approach to care and outcomes. We then calculated effect sizes (ES) for outcome variables reported in at least 6 studies according to standards for systematic reviews.^{10,11} For these calculations, we used means (SDs) or frequency (percentages), as appropriate. When summary statistics were not available, we attempted to contact the corresponding authors via e-mail. The primary goal of the meta-analysis was to determine the omnibus impact of intervention. Given the preponderance of NRS, the analysis focused on the magnitude of pre/postchange associated with intervention. As a result, we only analyzed reported changes for children exposed to intervention for RCTs. The small number of

Download English Version:

<https://daneshyari.com/en/article/5719198>

Download Persian Version:

<https://daneshyari.com/article/5719198>

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