Effectiveness of the IMFeD tool for the Identification and Management of Feeding Difficulties in Taiwanese children

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Abstract  Background: The Identification and Management of Feeding Difficulties (IMFeD™) tool was introduced in 2011 for management of children with feeding difficulties and has been used in various countries around the world. This study aimed to assess its acceptance and effectiveness in clinical practice in Taiwan.

Methods: This was a prospective, observational, multicenter study where subjects were followed over 3 months. Outpatients identified as picky eaters, having poor appetite, poor weight gain, or weight loss were enrolled. The acceptance and effectiveness of IMFeD tool were evaluated by caregivers and pediatricians.

Results: Among 423 children who completed the study (235 boys, 188 girls; 78.8% aged <5 years, 21.3% aged 6–10 years), the most common feeding difficulties were poor appetite in a fundamentally vigorous child (85.3%) and highly selective intake (70.2%). Mean percentiles for height and weight were 34.6/25.3 and 20.3/21.3 at enrolment, and increased by 5.4 and 5.9 (p < 0.0001) at the last visit, respectively. Most caregivers (86.5%) thought that the IMFeD tool helped them to understand and better identify picky eating behaviors. Pediatricians reported that the IMFeD tool was effective in 99.3% of patients for managing picky eaters in clinical practice.

Conclusions: The IMFeD tool was effective in addressing differences in needs according to type of feeding difficulty by providing a systematic approach to manage feeding difficulty in

Abbreviations: BMI, Body Mass Index; CI, Confidence Interval; IMFeD, Identification and Management of Feeding Difficulties for Children.
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1. Introduction

“Picky eaters” are usually defined as children who consume an inadequate variety of foods because they reject substantial amounts of foods, with prevalence ranging from 20% to 60%. Picky eaters may affect the relationship between the parent and the child, the child’s personality and behavior, and nutritional status in development phase. However, strategies used by parents to address feeding difficulties (e.g., force feeding, distracting or inducing the child to eat various foods) often fail and may even be counterproductive. Hence, pediatricians are key to resolving these problems when they are raised in the clinical setting.

Pediatricians often encounter children with more than one type of feeding difficulty, most of whom display poor growth that causes concern for the parents. Feeding disorders are diverse and complex, including limited appetite, sensory food aversion, feeding difficulties caused by organic diseases, and fear of feeding, and they may be associated with neglect or other gastrointestinal symptoms. Hence, the pediatrician needs to have a systematic approach to evaluate the feeding problem. If specific feeding difficulties are identified, the pediatrician can thus provide constructive advice to caregivers to improve the child’s behavior and relieve parental anxiety. Behavioral interventions that attenuate picky eating in children will help to promote the acceptance and independent choice of a variety of foods.

The Identification and Management of Feeding Difficulties (IMFeD™) tool, based on research by Chatoor and Kerzner, was designed to help pediatricians and caregivers identify and manage feeding difficulties. The tool kit includes the following: a parental questionnaire to gather accurate data about a child’s feeding patterns; an interactive diagnosis tool that helps the pediatrician to match information from the parental questionnaire; parental guidance sheets that recommend interventions for those conditions that can be managed at home; and suggested management for those conditions where physician management is the only option. The IMFeD tool was introduced in 2011 at the Third International Summit on Identification and Management of Children with Feeding Difficulties and has been used in various countries around the world. This study aimed to determine its applicability in clinical practice in Taiwan.

2. Methods

2.1. Study design

This was a prospective, observational, multicenter study whose primary objectives were to determine the acceptance of the IMFeD tool by pediatricians and caregivers and their perceptions of its effectiveness in children aged 1–10 years with feeding difficulties in Taiwan. The secondary objectives included measurement of the growth of subjects, evaluated as changes in height and weight, during the study period and determination of the categories and rates of feeding difficulties across the patient population. The sample size was based on practical rather than biometrical considerations. Data were collected between 20 February 2012 and 31 March 2013, and each participant was followed for approximately 3 months.

At enrolment, the parent or caregiver used the IMFeD tool, which assesses eating habits and symptoms, and the investigator classified the child based on the tool and prescribed management. The caregiver’s impressions of the child’s eating habits were recorded at subsequent monthly visits, as were changes in the child’s height and weight as a measure of nutritional status. At the last visit, the investigator and the caregiver recorded their perceptions of the tool on separate questionnaires and the caregiver also rated the overall process of managing feeding difficulties using the tool.

This study was carried out in accordance with the clinical research guidelines established by the Basic Principles defined in U.S. 21 CFR Part 312.20, the principles enunciated in the Declaration of Helsinki (Seoul, 2008), and the ICH Harmonized Tripartite Guideline regarding good clinical practice E6(R1). The study protocol and any amendments were reviewed and approved by the Institutional Review Board. Informed consent was obtained from all participating adults and from parents or legal guardians for minors or incapacitated adults before conducting any study procedures.

2.2. IMFeD tool

Our approach to identifying and managing feeding difficulties is illustrated by the algorithm shown in Fig. 1. After completing clinical assessments and parental questionnaire, physicians will make diagnosis to classify feeding difficulty and offer the fundamentals of tailored therapy for the specific features according to developmental stages (i.e., baby, infant to young child, and older child). For instance, for feeding difficulty due to parental misperception, IMFeD provides parent education; for feeding difficulty in an energetic child, IMFeD recommends to minimize conflict at mealtimes and emphasize high calorie foods and oral nutrition supplements; for feeding difficulty in an apathetic child, IMFeD teaches parents to interact appropriately during feeding and suggests having an empathetic caregiver; for feeding difficulty due to organic disease, IMFeD recommends to treat underlying pathology and...
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