
**EATING AND FEEDING DISORDERS IN THE FIRST FIVE YEARS OF LIFE: REVISING
THE *DC:0–3R* DIAGNOSTIC CLASSIFICATION OF MENTAL HEALTH
AND DEVELOPMENTAL DISORDERS OF INFANCY AND EARLY CHILDHOOD
AND RATIONALE FOR THE NEW *DC:0–5* PROPOSED CRITERIA**

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ABSTRACT: Problems of eating and feeding are one of the most common reasons of referral to pediatric and infant mental health clinics. This article is drawn from work done by the ZERO TO THREE Task Force developing the *DC:0–5* Diagnostic Classification of Mental Health and Developmental Disorders of Infancy and Early Childhood, specifically dealing with eating disorders in the first 5 years of life. The proposed changes come from both reviewing major studies and reviews published in the last 10 years and reports from clinicians collected through surveys commissioned by the Task Force. The main changes that are proposed include changes in terminology, such as *Eating Disorders* instead of *Feeding Behavior Disorders*, as well as focusing on the child's observed eating symptoms rather than on classifying the eating problems by inferred etiologies. Another major change relates to the differentiation between eating disorders that are observed beyond any specific caregiver–child relationship context and those that are confined to one specific relationship. A new category, *Overeating Disorder*, has been added, as it has been increasingly recognized as a significant and not rare clinical condition. Two illustrative cases are described. The proposed changes in the classification of eating disorders in the first 5 years of life are intended to encourage both clinicians and researchers to study these important disorders in young children.

Keywords: overeating, undereating, feeding, atypical eating

RESUMEN: Los problemas de hábitos de comida y alimentación son una de las más comunes razones por las que se refiere a la atención pediátrica así como a las clínicas de salud mental infantil. Este ensayo emerge del trabajo llevado a cabo por el Grupo CERO A TRES encargado de desarrollar *DC:0-5*, específicamente lo relacionado con trastornos en los hábitos de comida en los primeros cinco años de vida. Los cambios propuestos provienen tanto de la revisión de estudios importantes y revisiones publicadas en los últimos 10 años como de reportes clínicos que se obtuvieron por medio de encuestas autorizadas por el Grupo encargado. Entre los principales cambios propuestos se incluyen cambios en la terminología, tales como “Trastornos en los hábitos de comida” en vez de “Trastornos en la conducta de alimentación,” así como un enfoque en los síntomas de hábitos de comida del niño en vez de una clasificación de los problemas de hábitos de comida por medio de etiologías inferidas. Otro cambio significativo se relaciona con la diferenciación entre trastornos en los hábitos de comida que son observados más allá del contexto de cualquiera específica relación entre el niño y quien le cuida, y aquéllos que están confinados a una relación específica. Se ha añadido una nueva categoría en cuanto al Trastorno de comer de más, tal como se le reconoce más y más, no como una esporádica, sino una condición clínica significativa. Se describen dos casos a manera de ilustración. Con los cambios propuestos en la clasificación de trastornos en los hábitos de comida en los primeros cinco años de vida se pretende animar tanto al personal clínico como a los investigadores a estudiar estos importantes trastornos en niños pequeños.

Palabras claves: comer de más, comer de menos, alimentación, hábitos atípicos de comida

RÉSUMÉ: Les problèmes d'alimentation et ds conduites de l'alimentation sont l'une des raisons les plus fréquentes pour lesquelles on envoie consulter en pédiatrie ainsi que dans des cliniques de santé mentale du nourrisson. Cet article émane du travail fait par l'Équipe de Travail ZÉRO À TROIS chargée de développer le *DC:0-5*, et ce plus spécifiquement concernant les troubles de l'alimentation durant les cinq premières années de la vie. Ces changements proposés viennent du passage en revue d'études importantes et de revues professionnelles publiés au cours de ces dix dernières années et de rapports établis par des cliniciens, rassemblés à travers des sondages commandités par l'Equipe de Travail. Les principaux changements qui sont proposés comprennent des changements de terminologie, tels que “Trouble de l'alimentation” au lieu de “trouble des comportements d'alimentation”, ainsi que de mettre l'accent sur les symptômes d'alimentation observés plutôt que de classifier les problèmes d'alimentation en étiologies sous-entendues. Un

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autre changement important est lié à la différenciation entre les Troubles de l'Alimentation qui sont observés au delà d'un contexte de relation spécifique personne s'occupant de l'enfant – enfant, et ceux qui sont confinés à une relation spécifique. Une nouvelle catégorie de Trouble de Suralimentation a été ajoutée, puisqu'il est de plus en plus reconnu comme étant important et non une condition rare. Deux cas illustratifs sont décrits. Es changements proposés dans la classification des troubles de l'alimentation durant les cinq premières années de la vie ont pour fin d'encourager à la fois les cliniciens et les chercheurs à étudier ces troubles importants chez les jeunes enfants.

Mots clés: suralimentation, sousalimentation, alimentation, alimentation atypique

ZUSAMMENFASSUNG: Ess- und Fütterstörungen gehören zu den häufigsten Gründen von Überweisungen in die Pädiatrie sowie in psychologische Kliniken für Säuglinge. Dieser Artikel entstand aus der Arbeit des ZERO TO THREE-Arbeitskreises bei der Entwicklung der DC:0-5, welche in spezifischer Weise Essstörungen in den ersten fünf Lebensjahren behandelt. Die vorgeschlagenen Änderungen stammen sowohl aus Überprüfungen der wichtigsten Studien und Reviews der letzten 10 Jahre, als auch aus Berichten von Ärzten, die durch Umfragen im Auftrag des Arbeitskreises gesammelt wurden. Die wichtigsten vorgeschlagenen Veränderungen beinhalten Änderungen von Terminologien, wie "Essstörungen" anstatt "Fütterverhaltensstörungen", sowie die Fokussierung auf beobachtete Symptome des Kindes anstelle einer Klassifizierung der Essstörungen anhand vermuteter Krankheitsursachen. Eine weitere wichtige Veränderung betrifft die Unterscheidung von Essstörungen, die außerhalb eines bestimmten Bezugsperson-Kind-Beziehungskontextes beobachtet werden, und von solchen, die auf eine bestimmte Beziehung begrenzt sind. Eine neue Kategorie von Überernährungsstörung wurde ergänzt, da diese als zunehmend signifikanten und nicht seltenen klinischen Zustand erkannt wurde. Zwei veranschaulichende Fälle werden beschrieben. Die vorgeschlagenen Änderungen in der Klassifikation von Essstörungen in den ersten fünf Lebensjahren sollen sowohl Kliniker und Forscher ermutigen, diese wichtigen Erkrankungen bei jungen Kindern zu untersuchen.

Stichwörter: übermäßiges Essen/Überernährung, Unterernährung, Fütterung, atypisches Essen

抄録: 摂食と食行動の問題は、小児科並びに乳幼児精神保健外来に紹介される最も多い理由の一つである。この論文は、DC:0-5を開発する ZERO TO THREE Task Force、具体的には生後5歳までの摂食障害を扱っていた Task Force によってなされた作業から引用された。提案された変更は、過去10年間に出版された主要な研究と総説のレビュー、および Task Force によって依頼された調査を通して臨床家から集められた報告の両者からもたらされた。提案された主な変更には、「食行動障害」のかわりに「摂食障害」のような、専門用語の変更、並びに推測された病因論により摂食問題を分類するのではなく、観察された子どもの摂食症状に焦点つけることが含まれる。もう一つの主要な変更は、いかなる特定の養育者と子どもの関係性のコンテキストも越えて観察された摂食障害と、一つの特定の関係性に限定された摂食障害を区別することに関係する。新しいカテゴリーである過食障害 *Overeating Disorder* が追加された。というのは、それは重要な臨床的な状態であり、稀では無いという認識が増えているからである。二つの説明に役立つ症例が記述される。生後5歳までの摂食障害の分類における提案された変更は、臨床家と研究者の双方に、幼い子どもにおけるこれらの重要な障害を研究するように奨励することを目的としている。

キーワード: 過食, 過少食 undereating, 摂食 (哺育) feeding, 非定型摂食

摘要: 飲食和餵養問題是最常見轉診兒科以及幼兒心理健康診所的原因之一。本文源自一個制定 DC : 0-5 由零到三 (ZERO TO THREE) 工作小組所做的工作, 這小組專門處理在生命頭五年的飲食障礙。擬議的變化來自於刊登在過去10年的主要研究和評論, 及通過專責小組委託調查所收集的臨床醫生報告。被提議的主要變化包括詞彙的更改, 如以“進食障礙”代替“餵食行為障礙”, 及注重觀察孩子的進食症狀, 而不是對推斷病因飲食問題進行分類。另一個主要變化涉及到區分超出照顧者與子女關係及被限制在一個特定關係的飲食障礙。我們增加了一個新的飲食障礙類別, 因為人們越來越清楚地了解到它是一個顯著而非罕見的臨床情況。我們描述了兩個典型案例。這生命頭五年飲食障礙分類的修改建議, 旨在鼓勵醫生和研究人員研究這些重要的幼兒障礙。

關鍵詞: 飲食過多, 飲食過少, 餵養, 非典型飲食

ملخص: تعتبر مشاكل الأكل والتغذية من أكثر الأسباب شيوعاً لتحويل الطفل إلى الطبيب وكذلك لعيادات الصحة النفسية. هذا البحث مأخوذ من خلاصة إنتاج فرقة عمل (صفر إلى 3) التي طورت DC:0-5 وخصوصاً في تناولها لاضطرابات الأكل في السنوات الخمسة الأولى من حياة الطفل. التغييرات المقترحة تأتي من النظر في الدراسات الأساسية والمراجعات المنشورة في العشر سنوات الأخيرة والتقارير الإكلينيكية التي جمعتها فرقة العمل من خلال الاستبيانات. التغييرات الأساسية المقترحة تشمل تغييرات في المصطلحات مثل استخدام "اضطرابات الأكل" بدلاً من "اضطرابات سلوك التغذية" وكذلك التركيز على أعراض الأكل الملحوظة بدلاً من تصنيف مشاكل الأكل تبعاً لتصنيفات استدلالية من علم أسباب الأمراض. هناك تغيير كبير أيضاً يتعلق بالتمييز بين اضطرابات الأكل الملحوظة بعيداً عن أي علاقة للطفل مع مقدم الرعاية وبين تلك الاضطرابات الخاصة بسباق معين في علاقة معينة مع أحد مقدمي الرعاية. كما تم إضافة نوع جديد من اضطرابات الإفراط في الأكل والذي لوحظ أنه شائع وليس حالة نادرة إكلينيكية. وتم تقديم حالتين توضيحتين في البحث. وتهدف التغييرات المقترحة في تصنيف اضطرابات الأكل إلى تشجيع الاكاديميين والباحثين على دراسة هذه الاضطرابات الهامة في صغار الأطفال وخصوصاً في السنوات الخمسة الأولى.

كلمات مفتاحية: إفراط الأكل – نقص الأكل – التغذية – الأكل الغير نمطي

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Concerns about feeding and eating in infants and young children are common in primary care settings as well as in some mental health settings. More severe and impairing problems, particularly if the young child fails to gain weight, are likely to trigger referral to specialized clinics and/or to mental health settings. Not surprisingly, nosologies of early childhood disorders have typically included attention to this group of problem behaviors. To our knowledge, no data exist about culture-related diagnostic issues, although one may assume that different cultures have different norms of the optimal healthy eating pattern. For instance, Western societies strongly reinforce “values” of thinness and eating “healthy” foods whereas in developing countries where resources are scarce, the emphasis is put on survival.

THE *DC:0–3R* DIAGNOSTIC CLASSIFICATION OF MENTAL HEALTH AND DEVELOPMENTAL DISORDERS OF INFANCY AND EARLY CHILDHOOD APPROACH: PROS AND CONS

For many years, eating disorders in infancy and early childhood were dichotomized, as “Organic Failure to Thrive” or “Non-Organic Failure to Thrive.” Chatoor’s (2002; Chatoor & Egan, 1983) pioneering work, among others, has demonstrated that this dichotomous approach was misleading (and that feeding disorders could be classified in a more nuanced manner. As a result, the *DC:0–3R* Task Force adopted her classification of six subgroups of eating disorders in the first 3 years of life under the title “Feeding Behavior Disorders.” These subgroups include (a) Feeding Disorder of State Regulation, (b) Feeding Disorder of Caregiver–Infant Reciprocity, (c) Infantile Anorexia, (d) Sensory Food Aversion, (e) Feeding Disorder Associated with Concurrent Feeding Disorder, and (f) Posttraumatic Feeding Disorder. In all five categories, failure to gain appropriate weight is one of the required criteria. Chatoor and Ammaniti (2007) reported very good interrater reliability for the last four categories, and their study samples are hospital-based only.

Unfortunately, there have been few validating investigations from different groups, settings, and countries about this system of classification (Bryant-Waugh, Markaham, Kreipe, & Walsh, 2010; Manikam & Perman, 2000). One partial exception is Ammaniti and colleagues’ (Ammaniti et al., 2012; Lucarelli, Cimino, D’Olimpio, & Ammaniti, 2013) work in Italy that has focused mostly on the category Infantile Anorexia.

In our own clinical work in two very different settings, a community-based Infant Mental Health Unit and a day unit at the Schneider Children’s Hospital, we routinely diagnose all the referred infants using the *DC:0–3R*. In our experience, there are several problems linked with the six categories just described. First, the classification of feeding disorders is etiological despite the empirical, descriptive nature of the *DC:0–3R* [as well as the *Diagnostic and Statistical Manual of Mental Disorders (DSM)* and the *International Classification of Diseases (ICD)*]. If the etiologies were demonstrable, of course, specifying them would be highly desirable, but retrospectively identifying etiology after the disorder is established is an uncertain business. It is challenging, for obvi-

ous reasons, to identify infants at risk for feeding problems and following them prospectively to determine who does and does not develop and disorder and why.

Second, symptoms of each category often overlap, and many of the cases fulfill more than one category (e.g., posttraumatic feeding and feeding disorder associated with a medical illness often come together and may be manifested as a general refusal to eat and poor interest in food, as observed in the Infantile Anorexia category).

Third, the term *Infantile Anorexia* is misleading because it may imply that this is an early form of the classic Anorexia Nervosa observed in older children. We cannot identify any longitudinal data that support this implication. On the clinical level, infants with this diagnosis may have a relational parent–child disorder characterized by conflict over control and autonomy, but the infants do not show any of the core symptoms of anorexia nervosa, such as a distorted body perception or fear of thinness. Their parents want to feed them based on their own perceptions of what and how much their child should eat whereas the infant wants to eat by him- or herself, as can be observed with the feeding interaction scale by Chatoor, Loeffler, McGee, and Menvielle (1998). This observed conflict is usually one among other *symptoms* of a Relationship Specific Disorder of Early Childhood, in contrast with other eating problems that are more child-centered (i.e., post-traumatic, sensory).

Fourth, the category of “Feeding Disorder of Lack of Caregiver–Infant Reciprocity” actually relates to cases of parental failure to care for the child and is not a diagnosis in itself but one among other symptoms of a severe relational disorder. This category is very confusing because it implies, by definition, the existence of a severe relationship disorder, or even a deprivation disorder, which is in contradiction with the following note: “This diagnosis should not be used when a young child’s feeding problem is primarily due to Disorder of Affect, Adjustment Disorder, Posttraumatic Stress Disorder, Deprivation/Maltreatment Disorder, or a Relationship Disorder” (*DC:0–3R*, p. 38).

Fifth, the category of Feeding Disorder of State Regulation actually fulfills the criteria for a Regulatory Disorder, and therefore it seems to be more of a symptom than a diagnosis in itself.

Finally, as noted by Bryant-Waugh et al. (2010), the obligatory criteria of “failure to gain weight,” “growth deficiency,” “nutritional deficiencies,” or “delay of oral development” put aside those young children with very problematic eating patterns who do not exhibit any of them, such as very picky eaters who receive multivitamin supplements, 2-year-olds fed with several bottles a day, or even breast-feeding young children with parenteral feeding (Steinberg, 2007). In these cases, the impairment criteria should not be based on weight or nutritional deficiencies but more on the developmentally inadequate pattern of eating and on the child’s and/or family’s overall functioning.

In addition to these issues, naming the whole category “Feeding Behavior Disorders” is confusing, as it implies that all the categories are mainly behavioral and relational, which is obviously not true for sensory aversion and sensory-processing

disturbances. The use of the term *behavior* may bring us back to the dichotomous and outdated “distinction” between organic and nonorganic (psychogenic) eating disorders (Reilly, Skuse, Wolke, & Stevenson, 1999), and the use of the term *feeding* may convey that all the categories are relational. Indeed, the term feeding does reflect the *interaction* that takes place between the caregiver and the infant whereas the term eating reflects the *infant’s* autonomous handling of the food (opening the mouth, swallowing, reaching for the food). An eating disorder thus may result from either component whereas the eating and feeding processes may be impaired because of physiological and/or psychological reasons. Hence, the younger the child, the stronger the impact of parental attitudes and of the quality of their relationship in the development of his or her eating patterns. The disturbed eating thus may be observed only in the context of a specific relationship, as it reflects the disturbed dyadic or family relationship, of which the eating problem is only one of its manifestations.

In addition, in the current *DC:0–3R*, the Feeding Behavior Disorder category addresses only undereating cases. There are scarce data about overeating behaviors among infants and toddlers, despite the general concern about obesity among school-aged children. Most eating-related referrals of infants to pediatricians are about undereating behaviors. This may reflect the common view among adults that a chubby baby is a healthy and well-developed one, a view often held both by health professionals as well as parents. The general awareness among parents of the potentially pathological significance of overeating is much lower than that for undereating disorders in infancy. To date, no data of the prevalence of overeating in infants exist for the simple reason that this diagnostic category has not existed before. In practice, we do see cases in which overeating reflects a clinical situation that warrants diagnosis and treatment. The main clinical feature of this disorder is the child’s preoccupation with food at the expense of other developmentally appropriate activities, and the distress that is caused to him or her at any adult’s attempt to interfere. Having this new diagnosis available will enable clinicians to collect data.

Finally, pica and rumination have only been mentioned in the *DC:0–3R* as “Specific Feeding Disorders of Infancy and Early Childhood,” and the clinician was referred to the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision* (American Psychiatric Association, 2000). Bryant-Waugh and Piepenstock (2008) noted that these phenomena actually are not unique to early childhood and can be seen across the life span.

In addition, atypical behaviors such as pouching and hoarding are sometimes a reason for referral of very young children either to eating disorders clinics or to infant mental health units. There is no mention of these in the *DC:0–3R*, the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* (American Psychiatric Association (2013), or the International Classification of Diseases, Tenth Revision (World Health Organization); still, these cases warrant diagnosis and treatment.

In light of these issues, which have primarily been raised by clinicians who work with very young children with eating/feeding disorders and who have tried to apply the *DC:0–3R* criteria in

clinical settings, we propose a revision of the *DC:0–3R* aimed at making the challenging diagnostic task a bit easier.

OVERARCHING PROPOSED CHANGES

We suggest adopting the term *Eating Disorders* in light of the problematic use of the word *behavior*, as discussed earlier. Eating Disorders will include undereating, overeating, and atypical eating disorders. We suggest focusing on the child’s observed eating symptoms as criteria for diagnosis rather than including inferences about single or multiple etiologies in the criteria. Underlying causes of the child’s eating disturbance are crucial for treatment planning, such as sensory aversions, sensory-processing difficulties, and postexposure to traumatic medical procedures to the gastrointestinal system. Complex cases are those in which medical conditions are interplaying with a parent–child relational disturbance.

In addition, we suggest that the term *feeding* be used for situations in which the feeding/eating problem is one symptom among others of a Relationship Specific Disorder of Early Childhood. Maternal eating disturbances such as bulimia nervosa and anorexia nervosa are a risk factor for all types of eating disorders in infancy. As part of the Avon Longitudinal Study of Parents and Children, Micali, Simomoff, Stahl, and Treasure (2011) compared women with lifetime eating disorders and women without any lifetime psychiatric disorder. Their main finding was that lifetime eating disorder and active eating disorder during pregnancy increase the risk for infant feeding difficulties. Maternal distress (depression and/or anxiety) was the main mediating factor. These findings are in line with other studies (Stein et al., 2001) that have reported a link between maternal symptoms of stress, depression, and anxiety and nonresponsive feeding styles (controlling, indulgent, underinvolved). Nonresponsive feeding, in turn, has been related to under- or overweight conditions among young children (Micali, Simomoff, Stahl, & Treasure, 2009).

Family conflicts around food are quite common, and the tension often becomes an additional risk factor (Davies et al., 2006). Scaglioni, Salvioni, and Galimberti (2008) showed how parental pressure, control, and restriction over what and how much the child eats impacts significantly on child’s overeating as well as undereating behaviors. A more recent study (Sonneville et al., 2013) has found a strong link between parental control with overeating, food sneaking, hiding, and hoarding. Parents who have conflictual issues around control of their own food intake often adopt controlling child-feeding practices in an attempt to prevent overweight children (Birch & Davison, 2001) instead of promoting their child’s ability to self-regulate intake. More specifically, there is a well-proved relationship between controlling style during mealtimes and play in mothers with eating disorders of all kinds (bulimia nervosa, binge eating, anorexia nervosa) and feeding problems in their offspring (Cooper, Whelan, Woolgar, Morrell, & Murray, 2004; Micali et al., 2009, 2011; Stein et al., 2001). Maternal depression and anxiety have been consistently associated with child feeding difficulties (Benoit, 2000; Blisset, Meyer, & Haycraft, 2007; Chatoor et al., 1998; Coulthard, Blisset, & Harris, 2004).

In light of these considerations, we propose to prefer the descriptive approach over the etiological one, and to use the diagnosis of Relationship Specific Disorder of Early Childhood in cases in which the eating and/or feeding disturbance is one of its manifestations. Regardless of the types and causes of eating disorders, five key elements should be considered (Birch & Davison, 2001): How does the problem manifest? Is the child suffering from any medical disease? Have the child's weight, nutritional status, and development been affected? What is the atmosphere during meals? Is the family under stress? Bryant-Waugh et al. (2010) listed the common disturbances in feeding/eating seen in clinical settings, as follows:

- Delay or lack of eating skills.
- Difficulty with fluids or with foodstuffs.
- Reluctance or refusal to eat based on taste, texture, temperature, or any other sensory factors.
- Lack of interest/appetite.
- Use of feeding to self-soothe, self-stimulate, comfort.

Finally, we suggest that the level of impairment in either the child and/or family functioning due to the eating disturbance is the main criteria according to which the clinician will ultimately decide whether a diagnosis is warranted. The presence of poor weight gain and/or nutritional deficiencies is a parameter of severity, and therefore also should be noted. As Bryant-Waugh and Piepenstock (2008) emphasized, the young child's almost total dependency on his or her caregivers requires that the definition of impairment encompasses the child's and the parents' functioning. In more concrete terms, the child's symptoms must cause distress to the child, interfere with the child's relationships, limit the child's participation in developmentally expected activities or routines, the family's participation in everyday activities or routines, the child's ability to learn and develop new skills, or interfere with developmental progress and/or lead to failure to follow age-appropriate growth trajectories.

OVEREATING DISORDER

The core features of Overeating Disorder are the young child's excessive preoccupation with food and eating, as manifested by a pattern of seeking food between mealtimes or scheduled feedings, persistently asking for excessive amounts of food during meals, taking food from others or forages from garbage bins, stuffing food in the cheeks when eating, and talking and playing repeatedly about food. The young child becomes distressed if prevented from engaging in these behaviors. Of course, one has to rule out food unavailability and hunger, medication side effects, and medical conditions (e.g., Prader-Willi syndrome, hypothyroidism, etc.). The child may have nonspecific symptoms of anxiety, irritability, and/or anger. To receive such a diagnosis, the abnormal eating behaviors must be pervasive, beyond any specific relational context.

Overeating is rarely seen in children under 2 years old because some degree of autonomy and verbal and motor skills are required to search for food. In contrast, cases of *overfeeding* are quite common in children under 2 years old and especially during the first year of life. Whenever overfeeding is a manifestation of an early parent–infant relational disorder according to the proposed *DC:0–5* criteria, an Axis I diagnosis of Relationship Specific Disorder of Early Childhood is warranted. Similarly, whenever the overeating pattern is limited to a specific relational context (dyadic, triadic, family), the diagnosis of a Relationship Specific Disorder of Early Childhood, with manifestations of overeating, is relevant.

Comorbid diagnoses of Sensory Processing Disorder, Depression, and Reactive Attachment Disorder also need to be considered.

There are no published data about the course of overeating disorder among infants. Based on our clinical experience, overeating does not always resolve spontaneously, and parents tend to seek professional help only when the child is putting on weight and their attempts at limiting the child's food craving are unsuccessful. There are no published prospective data about any link between overeating in infancy and binge eating or bulimia nervosa at a later age; therefore, we suggest using different terms. The main potential consequences of overeating disorder include the child's obesity, lack of participation in age-appropriate social activities, and ultimately, peer rejection. Hence, it is important to diagnose and to treat it as early as possible. The existence of a diagnostic category of Overeating Disorder in the first years of life may encourage researchers and clinicians to study the phenomenon in depth.

UNDEREATING DISORDER

Based on prevalence data collected in Western countries, some 25 to 40% of infants and toddlers are reported by their caregivers as having undereating problems in the early years (all lumped into the term of *feeding disorders*), mainly colic, vomiting, slow feeding, selective eating, and refusal to eat (McDermont et al., 2008). Some 3 to 10% of them have severe problems, and only 1 to 2% of them have a severe, long-lasting eating disorder (Manikam & Perman, 2000). Eating plays an important role in most cultures, acceptable eating habits vary widely between religious and ethnic groups, and eating disorders have been conceptualized as culture-bound syndromes. In this context, note that most prevalence data and studies have addressed North American and European populations.

There are no published data about the gender distribution of undereating disorders in infancy. Based on clinical reports, they seem to be equally frequent in boys and girls (vs. later age).

Diagnosis

Historically, undereating disorders have been classified under two categories: organic and nonorganic failure to thrive disorders (Chatoor & Egan, 1983). The nonorganic cases were thought to be mainly a reflection of a mother–infant relationship disorder (Chatoor, Hirsch, Ganiban, Persinger, & Hamburger, 1998). Later,

Chatoor (2002, 2009) made the case for giving up the dichotomous approach of organic versus nonorganic failure to thrive, and proposed a six-category classification based on the age of onset, the developmental stage at which the eating disorder started, and its presumed etiology. The classification system included both relational and nonrelational etiologies such as sensory aversions and posttraumatic feeding disorders.

In a recent report (Kerzner et al., 2015), children with undereating behaviors were categorized into three main problematic eating behaviors: limited appetite, selective intake, and fear of feeding. The feeding styles of caregivers also are categorized as responsive, controlling, indulgent, and neglectful. The advantage of this categorization is that it is based on the infant's observed behaviors and not on etiological factors that are often inferred and mixed. The caregiver's style of feeding the infant is encompassed within their specific relationship.

Along a similar line, we propose to diagnose an undereating disorder whenever the young child consistently eats less than expected for his or her age, exhibits maladaptive eating behaviors such as a consistent lack of interest in eating, a fearful avoidance of eating, a difficulty regulating state during feedings (e.g., repeatedly falls asleep or becomes agitated), eating only while asleep, refusing to make the transition to solid foods, eating only when specific conditions imposed by him or her are fulfilled by caregivers (in front of television, with toys and stories, etc.), and/or being an extremely picky eater. Significant impairment of the child's and/or the family needs to be present to warrant the diagnosis, as described earlier. Note that the criteria of weight loss or lack of expected weight gain is not mandatory. Indeed, some young children may refuse to eat solids, but drink several bottles of formula during the day and thus stay on their weight curve despite their maladaptive eating pattern (Bryant-Waugh et al., 2010). Common associated features include prolonged mealtimes, stressful mealtimes, lack of appropriate autonomous feeding, nocturnal eating (after 1 year of age), prolonged breast- or bottle-feeding, and/or failure to taste new textures.

In complex cases in which there is a concomitant medical diagnosis, one has to make sure that the undereating pattern is not fully explained by it or by a medication side effect. The most common medical diagnoses include milk allergy; structural abnormalities that affect the naso-opharynx, larynx, trachea, and the esophagus; neurodevelopmental disabilities; oral hypersensitivity and oral-motor dysfunction; systemic illnesses; and organic causes of pain such as esophagitis due to gastroesophageal reflux. Young children with cystic fibrosis often have a pattern of eating slowly, having difficulty chewing, preferring liquids, refusing to eat solids, and having an aversion to new food. Infants with gastroesophageal reflux tend to have lower intake of energy-generating food, have fewer adaptive skills and less readiness for solids, are more likely to refuse food, and are more demanding and difficult at feeding time.

For young children, it is imperative to differentiate between the *feeding* (interaction with caregiver and caregiver's behaviors) and the *eating* (own child's behavior with food) components of the

problem. Physical morbidity, decreased exploratory behavior, and negative affect are often observed among infants with persistent undereating behavior disorders.

Picky Eating

Food preferences develop from genetically determined predispositions to like sweet and salty flavors and to dislike bitter and sour tastes. However, taste development is very much impacted by exposure and flavor learning experiences, for which parents play a pivotal role. It is quite common to find that parents of picky infants are, or were in the past, picky eaters as well. Tension and distress are very common among the parents of these children. Attempts at either praising or criticizing the child do not have any effect on the child. Some of these children exhibit aversion to specific smells, textures, and tastes, and may seem to have some kind of sensory aversion, combined with a behavioral component. Picky eating may lead to specific nutritional deficiencies. Selective picky eating may start in the second half of the first year. Some of the infants start being selective at around 9 months of age at the transition to solids some have a history of refusal to wean from breast-feeding. Still, selective eating may start at any age. Picky eating is not necessarily accompanied with low weight or with nutritional deficits (Jacobi, Agras, Bryson, & Hammer, 2003).

Comorbidity of Undereating Disorder

A relational parent–infant and/or family relationship disorder often co-occurs with the diagnosis of Undereating Disorder, whenever the eating disturbance is observed within the context of a disturbed specific relationship. Contingently, caregiver–child interactions during feeding should be assessed and may be categorized as responsive, controlling, indulgent, or neglectful (Kerzner et al., 2015). Child resistance to eating (turning the head away from food, throwing food) also should be noted. The presence of a medical diagnosis is relevant to the most complex cases in which both physical and emotional/behavior factors interplay, and should appear on Axis III of the DC classification.

Differential Diagnosis of Undereating

Undereating may be a symptom of depression, posttraumatic stress disorder, and/or reactive attachment disorder; therefore, these diagnoses must be ruled out. Whenever the eating problem is observed only in a specific parent–child interactive context, a primary diagnosis of Relationship Specific Disorder of Early Childhood should be preferred over Undereating Disorder.

Continuity and Discontinuity of Undereating Disorders Along the Life Span

The available prospective research has confirmed early self-reports by suggesting *some* degree of continuity of eating problems from infancy to adulthood. For example, in a large prospective study

(McDermott, Mamun, Najman, Williams, O'Callagan & Bor et al., 2010), some 40% of the irregular eaters at age 5 years were still irregular eaters at age 14. Independent contributions included the children's own capacity to regulate their sleep and mood, as well as maternal anxiety and negative feelings toward their child during his or her early years. Many of the outcome studies have considered feeding and sleeping disorders as symptoms of regulatory disorders and have lumped the data together (Ostberg & Hagelin, 2010). A recent meta-analysis of these studies (Hemmi, Wolke, & Schneider, 2011) has shown that infants with crying, sleeping, and/or feeding problems have more behavioral problems as children than do controls, especially in multi-problem families. For bulimia nervosa, the evidence is limited to a retrospective study, where history of overeating and rapid eating in childhood were more common in women with bulimia nervosa than in their unaffected sisters. However, long-term prospective follow up of individuals diagnosed with feeding disorders in childhood are lacking.

ATYPICAL EATING DISORDERS

As a whole, publications about atypical eating behaviors are scarce, and additional research is needed. These include pica, rumination disorder, hoarding, and pouching. Their respective prevalence is unclear. As mentioned in the introduction, the *DC:0-3R* refers the clinician to the *DSM-IV* and ICD-10 classifications. In her extensive review, Bryant-Waugh et al. (2010) raised the question of the possible obsessive and compulsive nature of pica and rumination, and accordingly, whether they should be put under the diagnostic category Obsessive Compulsive Disorder (OCD). Nevertheless, more research on this question is needed before these disorders are reclassified. In addition, both pica and rumination disorder may be seen in association with mental retardation and autism spectrum disorder, and are designated as independent diagnoses only if severe enough (Bryant-Waugh & Piepenstock, 2008; O'Brien, Bruce, & Camilleri, 1995).

Pica

Pica describes persistent eating of *nonfood* substances such as earth, chalk, paper, soap, cloth, string, wool, soil, paint, gum, hair, ice, clay, starch, metal or plastic objects, or feces. Pica is usually not associated with general aversion to food, and neither is it always accompanied by weight or growth deficits. Before the age of 2 years, developmentally normal mouthing of objects may result in ingestion; therefore, caution is warranted about making a diagnosis of pica in children less than 24 months old. In fact, the ICD-10 diagnosis criteria for pica specify a minimum age of 2 years.

The prognosis for pica is related to the presence of other factors in addition to the potential medical complications of the ingestion of nonfood materials. Pica can occur in otherwise normally developed young children, although the phenomenon is more common in children with diagnoses of intellectual disability, autism,

early childhood-onset schizophrenia, and Kleine-Levin syndrome. Some cases of pica are linked with lack of parental supervision and neglect. In these cases, pica is one symptom of the broader parent-infant severe relational disorder, and should be noted as a specific comorbid diagnosis only if severe enough (Bryant-Waugh & Piepenstock, 2008).

The course of pica depends on its severity and may become protracted and lead to medical emergencies. Iron and zinc deficiencies have been reported in some cases of pica. Some cases of pica are diagnosed following intestinal obstruction and/or perforation, infections such as toxoplasmosis and toxocariasis following ingestion of feces or dirt, and lead poisoning also may result from ingestion of dirt or wood chips with lead paint. Pica predisposes to iron-deficient anemia, which also predisposes to pica.

Rumination

Rumination describes the repeated regurgitation of food that follows feeding or eating. The Rome III Diagnostic criteria (Rasquin et al., 2006) differ from that of the *DSM-V*, as the *DSM-V* requires a minimum duration of 3 months rather than 1 month, an onset of 3 to 8 months, a lack of distress in the infant, together with poor interaction with others, and its absence during sleep. The ruminating infant often arches his or her back with the head held back while making sucking movements with the tongue, and seems to be engaged in a self-soothing or self-stimulating activity. Between meals, the infant may be hungry and irritable. Weight loss and failure to gain weight are common, up to the point of malnutrition, especially when the regurgitation follows every meal (O'Brien et al., 1995). Rumination can be observed all across the age range from infancy to adulthood (Malcom, Thumshirn, Camilleri, & Williams, 1997). In infants, it usually starts between 3 and 12 months. Environmental risk factors include neglect, lack of stimulation, and severely disordered parent-infant relationship.

Common medical conditions in infancy, such as gastroesophageal reflux, vomiting, pyloric stenosis, hiatal hernia, and Sandifer syndrome, need to be ruled out (by physical examination, X-rays, and laboratory tests) before the diagnosis of regurgitation is made.

Rumination may be self-limited, but also may become protracted, leading to potentially fatal malnutrition. Some cases have an episodic course; others are continuous.

Hoarding

Hoarding relates to the child storing food in unusual places (e.g., under a pillow, in a closet, in a desk). Finding food in unusual places is indicative of the diagnosis. Some of these children are overweight whereas some are underweight, depending on what they do with the hidden food. To our knowledge, it has not been described in children less than 2 years old. Food hoarding requires ruling out hunger, neglect, maltreatment, and OCD (Sonneville et al., 2013).

Pouching

Pouching relates to the child holding food in his or her mouth for long periods of time without swallowing it. Dental caries are often an associated sign in cases where pouching happens on a daily basis and for several hours (Bhargav Hedge, Chandra, Gaviappa, & Shetty, 2014). To our knowledge, there are practically no publications about pouching food in children less than 2 years old; yet, clinicians occasionally see this behavior. No data have been published about risk and prognostic features of pouching during infancy. Still, based on clinical experience, infants who have been put on a nasogastric (NG) tube or on percutaneous endoscopic gastrostomy may develop pouching behaviors in the process of tube weaning. Traumatic events that involve painful medical conditions/procedures may play a role as risk factors. Ruling out any medical condition that prevents the child from swallowing is warranted before a diagnosis of pouching is given.

Comorbidity of Atypical Eating Disorders

Relationship Specific Disorder of Early Childhood may be a comorbid diagnosis if domains other than eating are symptomatic and fulfill criteria for Relationship Specific Disorder of Early Childhood. Autism, intellectual disability, childhood-onset schizophrenia, and Kleine-Levin syndrome are comorbid diagnoses commonly seen with pica. In addition, pica can be associated with trichotillomania (hair pulling and swallowing) and skin-picking disorders (Bryant-Waugh & Piepenstock, 2008). Regarding rumination disorder, in cases that criteria are fulfilled for a neurodevelopmental disorder and/or an intellectual disability, the comorbid diagnosis of rumination disorder will be given only if severe.

ILLUSTRATIVE VIGNETTES

In the following paragraph, we present the cases of 2 toddlers who were referred to our Infant Mental Health Clinic because of overeating and consequent impairment in functioning and 2 others with undereating symptoms. These cases illustrate the differences between Axis I Eating Disorders and Relationship Specific Disorder of Early Childhood with overeating or undereating as its symptoms.

Case 1

A., a 2½-year-old girl, was referred to an infant mental health program because she persistently asked for food, at home and at kindergarten, and ate significantly more than did her peers. In the initial session, we saw a chubby little girl with a sad expression, who clung to her father, avoided her mother, and displayed limited exploratory behavior. In contrast, her language skills were advanced, as was her ability to perceive the ambiance of her surroundings. She appeared to be hypervigilant.

As a baby, A. had been perceived as “fussy,” and mother had calmed her down with bottles of milk (Mother did not breast-

feed her because the idea “disgusted” her.) Mother’s description of A.’s eating behavior was: “She would drink the bottle as if I was starving her.” A. entered kindergarten at the age of 2 years; she manifested separation difficulties and started to ask for food all day long. A. became oppositional at home while very compliant and shy at kindergarten.

The observed mother–child interaction revealed overt hostility with maternal negative attributions toward the child, mixed with mother’s strong guilt feelings. Mother reported suffering from severe OCD, with many rituals that impinged on her emotional availability. The child showed alternating behaviors of avoidance and oppositionality.

The observed triadic mother–child–father interaction revealed that A. had a closer relationship with her father than with her mother. The father took a mediating role between his wife and daughter, and the overall family atmosphere during their interaction was sad and tense. An individual session with the parents revealed mother’s past childhood history of physical and emotional abuse, and her own difficulties with sexuality, intimacy, and empathy, in addition to her OCD. The father grew up in a warm and extroverted family atmosphere. They had significant difficulties coparenting their child.

Diagnostic Summary

The child met criteria for the following *DC:0–5* proposed Axis I diagnoses of (a) Overeating Disorder (persistently asked for food, at home and at kindergarten, and ate significantly more than her peers) and (b) Relationship Specific Disorder of Early Childhood (Mother) with oppositional symptoms.

Although the overeating seemed to have developed in the context of a conflicted mother–child relationship, the fact that the overeating behavior occurs at kindergarten in addition to home indicates that it has generalized and become a characteristic of the child that manifests cross-contextually. The oppositional behavior, on the other hand, is limited to her relationship with her mother—not with her father and not at school—and therefore meets criteria for Relationship Specific Disorder, with oppositional behavior as its main symptom.

The recommended treatment for this child included triadic and dyadic sessions, and referral of mother to cognitive behavioral therapy. The treatment lasted 1 year; the overeating disorder resolved and the mother–child relationship improved, but remained tense, with sleep and oppositional behavior still evident. We observed a significant improvement in A.’s ability to verbalize her feelings of sadness and anger whenever her mother was emotionally unavailable to her and was preoccupied with her compulsions and obsessions. Both parents showed improvement in their communication and coparenting skills.

Case 2

B., a girl who was 2 years 9 months of age and the second child of a seemingly well-functioning couple, was referred because of

her constant demand for food. Her birth weight was at the 50th percentile; at 5 months, she crossed to the 90th percentile. She developed normally, was easily toilet trained, and adjusted well at kindergarten.

She ate full plates, but did not demand food between meals at kindergarten, as opposed to constant requests for food when at home. Mother explained that as a baby, B. would take the breast every 2 hr “as if she was starving.” Then as a toddler, she screamed whenever she finished her plate, “as if we took from her the pleasure of life!” “I don’t want her to become fat, as I am, as we are in my family, except for my mother, who is thin,” her mother explained. “I tried from day 1 to restrict her, but nothing helps.” Mother and father like sweets, eat between meals, and feel bad about themselves around this issue.

B. was very dependent on her mother, and whenever her mother was at home, she refused to have her father do any of the daily caregiving tasks. Mother worked long shifts; her father was the one who brought B. to kindergarten and back home. Mother avoided telling her daughters when she would be on shift “because she felt bad about leaving them.” The parents did not think it was a problem for B. not to know when she would see her mother and when she would not, “as long as one of us is always there for them, why does it matter?”

Mother first described her own family as “very warm and committed to one another.” Later, however, she described a very complex relationship with her own mother, whom she has to please and comfort, and with her father, who since her adolescence had laughed at her being fat. Father grew up with an anxious, irritable, and sometimes abusive father and an overcompliant mother. As an adult, he avoided conflicts, even to the detriment of his own needs. Both father and mother used food as an anger/frustration alleviator.

Mother–child interaction was characterized by enmeshed physical contact and strong maternal ambivalent feelings toward B., switching from identification to anger. The observation of the triadic mother–child–father revealed the child’s preference to stay closer to father than to mother, at the expense of her exploratory behavior. At some point during the session, B. reacted to the therapist, saying “No” by immediately turning to her mother and crying while saying “I am hungry!”

Diagnostic Summary

The *DC:0–5* diagnoses are: Axis I: Relationship Specific Disorder of Early Childhood (mother and father), with overeating symptom.

Note that in this case, versus the first one, a diagnosis of Overeating Disorder on Axis I was not given because the child did not exhibit the overeating outside of the context of the relationship with her parents.

In the triadic (both parents and child) psychotherapeutic process, we explored the psychological meaning of the child’s saying, “I am hungry,” instead of speaking out about being frustrated and anxious at her mother’s unpredictable absence. Father was able to see the link between his conflict-avoidant behavior and his need for sweets. A turning point in the treatment process was the mother’s

disclosure of her binge-eating disorder that was a major unconscious motivation in her need to restrict B.’s eating very early.

Relating to treatment, note that although in these two cases the treatment was essentially the same, in some cases, there might be treatment implications that would justify the distinction, such as a behavioral approach to overeating that would be implemented at school and at home in the first case, but not in the second case.

Case 3

A. was 3½ years old when she was referred for psychiatric consultation, upon the advice of her speech therapist. The referral question was about an eventual weaning of NG feeding, which had been placed since the age of 4 months. A., the first child of a married couple, was prematurely born (33 weeks’ GA) with a severe form of Netherton syndrome, a rare autosomal recessive multisystem disorder, characterized by erythroderma and ichthyosis (peeling skin), hair abnormalities, immune dysregulation, and severe failure to thrive (nanism). A.’s first 4 months were spent at the NICU. She did not put on weight, and her vital need for a high-protein diet (like in the case of severe burns) required NG tube-feeding (Gastrostomy was not an option because her skin would not heal.) Since then, she had been hospitalized several times because of severe intercurrent infections that quickly became life-threatening and necessitated treatment at the NICU. The parents were told by doctors that A.’s survival depended on avoiding intercurrent infections at any cost, and the best way was to keep the infant home, for an indefinite period. Mother stayed with her at home for the first year and a half, then A.’s father stayed home with her, trying to work from the house. A.’s severe developmental delays were soon obvious, and the parents set up a therapeutic, home-based multidisciplinary team.

A.’s external appearance was painful to look at: a little red creature, hard to say boy or girl, with a bold skull, two round eyes, and an NG tube in the middle of a very stretched and peeling skin. She looked much shorter than her age, communicated with guttural sounds only, and made eye contact. She could not make any mimics (because of her stretched skin), and only her eyes revealed some of her emotions. She looked like a 1-year-old infant with an old woman’s expression. Her feet were swollen and red, and she did not walk yet; her hands were the same: A. hardly held toys, keeping her fists clenched.

Explicit fear of losing A. mixed with implicit ambivalence about her very existence were the bases of the parent–child relationship. During the first months of A.’s life, mother had significant bonding difficulties and could not touch her, and father was the one who readily accepted the child. When asked about her first reactions to the baby’s appearance, mother denied any negative feelings. We had the feeling that some of her obsessive need to ask the team about their health status (despite knowing that all of us had well understood the potential danger) and her constant concern about A. becoming ill reflected, at least in part, a reaction formation to her initial rejection and semiconscious wish her deformed baby would not survive. A mini-separation between A. and each of her

parents revealed an ambivalent/resistant attachment, as opposed to a secure one to the father.

Using the proposed *DC:0–5* categories, we would give on Axis I two comorbid diagnoses: Undereating Disorder (with chronic NG tube feeding) and Specific Mother–Child Relationship Disorder with separation anxiety symptoms. On Axis III, the child’s medical condition would be noted as Netherton syndrome, severe form, with Failure to thrive and language delay.

Case 4

N., 1 year 4 months of age and the only son of a young couple, was referred to our Infant Mental Health Unit by his pediatrician because of extremely frequent breath-holding spells. N. was born prematurely and was diagnosed at birth with diaphragmatic hernia that necessitated immediate surgery. He stayed at the NICU for 3 months because of convulsions and persistent respiratory problems, and was discharged with diagnoses of bronchopulmonary dysplasia, left hemiplegia due to cerebral palsy, and poor eating. Discharge home was extremely stressful for the parents. Mother herself was diagnosed with a mixed anorexia and bulimia eating disorder, in addition to childhood-onset juvenile diabetes mellitus. Her eating disorder started shortly after her older brother committed suicide when she was 14 years old. Pregnancy had been difficult on her because of the body changes, and she did not keep her diabetes balanced. As a result, she suffered from recurrent hypoglycemic spells.

The observation of the mother–child interaction revealed a highly ambivalent and tense relationship, with the breath-holding spells especially frequent at mealtimes. At the daycare, however, N. ate well, and his breath-holding spells were limited to situations of frustration and disappeared within a short time after the teacher learned to ignore them.

In this case, we would give no diagnosis of Eating Disorder on Axis I but a Mother–Child Relationship Specific Disorder of Early Childhood with symptoms of eating and breath-holding spells because the eating symptoms were observed only in the context of the mother–child interaction. His medical condition of cerebral palsy would be mentioned on Axis III.

These first two vignettes about overeating disorder illustrate the difference between Eating Disorder and Relationship Specific Disorder of Early Childhood with problematic eating as its symptoms. This distinction is important not only for diagnostic precision but also especially for treatment planning.

CONCLUSION

Based on recent literature and clinical experience, eating disorders in infants and young children continue to be a significant clinical issue that leads infants and parents to pediatricians and infant mental health clinicians. Nevertheless, with our clinical experience with young children with eating problems and experience using criteria in the *DC:0–3R*, some substantial changes in the *DC:0–5* are proposed: (a) differentiating between feeding disorders that are

one manifestation of a disturbed parent–infant relationship and eating disorders that are pervasive across contexts, (b) remaining descriptive rather than etiologic, and (c) adding other atypical categories not previously considered overeating, pouching, and food hoarding.

Most research and clinical descriptions have focused on undereating conditions, although overeating is significant in terms of physical and emotional morbidity; therefore, the new diagnostic category is clearly needed. The hope is to encourage clinical reports and research. Similarly, pouching and food hoarding are often missed despite their potential consequences. Therefore, these children need to be examined, diagnosed, and treated.

We do not yet know whether overeating and undereating disorders in infancy reflect the same psychopathology as do eating disorders in late childhood and adolescence; therefore, it seems more appropriate to remain descriptive rather than specifying etiology. Longitudinal studies are much needed, as are treatment-outcome studies, for each of the eating disorders.

We hope the changes that we have proposed for the new classification of eating disorders in the first 5 years of life will encourage both clinicians and researchers from different settings, countries, and cultures to study in depth eating/feeding disorders in young children, one of the most common reasons of referral to pediatric as well as infant mental health clinics.

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