

Current topic

Non-organic failure to thrive: a reappraisal

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SUMMARY Non-organic failure to thrive has traditionally been regarded as due primarily to maternal rejection and neglect. A critical reappraisal of the evidence suggests a more balanced view of the mother-child relationship should be taken. A classification of the condition, founded on facts not concepts, is urgently required. Non-organic failure to thrive should be viewed in a multidimensional context, in which potential influences upon the symptomatic infant are considered.

Inadequacy of nutrition is caused by both a failure of adequate provision of food and by inadequate intake. A vicious circle of maladaptive behavioural interaction between caregiver and infant is often present, sustained by high emotional tensions. Clinical intervention should aim to clarify the contributions made by both caregiver and infant to that interaction and thus break the cycle. The basis on which intervention is made should be direct observation of the parent and child relationship in as many different environmental contexts as feasible, especially during feeding. The multidisciplinary team has an important role to play in management.

An emphasis on parental culpability in the aetiology of non-organic failure to thrive, in the absence of direct evidence of neglect, is wrong

The problem of the child who fails to achieve a reasonable rate of growth is a relatively common one. The condition is of considerable importance to general practitioners, paediatricians, and health visitors as between one and five per cent of paediatric admissions to hospital are suffering from failure to thrive.¹ Either height or weight, or both, may be affected and older children often show additional peculiarities of behaviour, with developmental retardation in mental and motor functioning.² The term 'failure to thrive' is sometimes reserved for infants, that of 'growth retardation' being applied to older children, but for practical purposes the terms are interchangeable. Many of the more serious cases are brought to hospital paediatric departments for investigation, but consistently less than one quarter are found to have an important organic disease.³ A further quarter have a functional disorder which may be exacerbated by adverse environmental factors such as feeding problems, or an inappropriate diet.⁴ Over one half are classified as non-organic failure to thrive, or non-organic growth retardation, because no sufficient physiological cause for the condition can be found.⁵

Concepts

Non-organic retardation of growth has been conceptualised in several diverse ways, each of which has evolved relatively independently over many years. By far the longest established view regards the condition as resulting from emotional deprivation.^{6,7} Because of the primary role assumed by mothers in child rearing, the synonym 'the maternal deprivation syndrome'⁶ is often used. Currently, the third revision of the *Diagnostic and Statistical Manual of Mental Disorders* of the American Psychiatric Association⁸ classifies non-organic failure to thrive as the 'Reactive attachment disorder of infancy'.

A second historical view rests on the evidence that when careful evaluation is made of growth retarded children's nutritional intake it seems to be inadequate, and in many cases growth rates are increased by dietary supplements.⁹ Proponents of this view believe that chronic undernutrition is a necessary and sufficient cause of the condition.

A third, but less prominent theme, has focussed on the individual characteristics of the children

themselves. The opinion that they might be failing to thrive because of 'some congenital weakness of constitution' was first ventured fifty years ago by Holt and McIntosh.¹⁰ It has occasionally resurfaced in different guises, as in the reports that certain metabolic abnormalities such as spontaneous hypoglycaemia¹¹ may accompany the condition. Abnormalities of growth hormone function, without depressed neurosecretory activity to provocative stimuli,¹² have also been described. These are sometimes associated with a disordered sleep pattern.¹³ A cogent argument that child-related factors, not maternal factors, are the most important risk indicators of idiopathic growth retardation, has recently been proposed by Kotelchuck.¹⁴

Controversies

There are a number of reasons why the aetiology of non-organic growth retardation has been considered in such different and seemingly incompatible ways. The first and most important concerns the quality of evidence on which theories have been built and assertions made. Most studies of the condition have been based on small unrepresentative samples of cases whose selection was open to bias. The term non-organic failure to thrive does not fulfil the criteria for a satisfactory medical diagnosis but is merely an arbitrary description of a pattern of growth.¹⁵ Growth failure is likely to be the result of a variable range of causes depending on how far the defining characteristics deviate from the 50th centile on population norms, and whether height (or supine length) as well as weight criteria are used.

The second reason for controversy on the issue of aetiology concerns the validity of interpretation of findings. Anecdotal assertions underlie the widespread belief that the mothers of children with non-organic growth failure are 'in general depressed, angry, helpless and desperate—with poor self esteem'.¹⁶ In fact no 'universal' attribute of caretakers has been found.

Thirdly, variable emphasis has been placed on the individual characteristics of the children—their temperament, their developmental attainments, and their behaviour. Apparent inconsistencies may be resolved when the problem is seen in a developmental perspective. For instance, in terms of temperament, infants who fail to thrive seem to fall into two broad groups, those who are irritable and non-cuddly as babies¹⁷ and those who, often at a slightly older age, seem apathetic, withdrawn and apprehensive, and lack vocalisation.¹⁸

An alternative interpretation of causality

The assumption that the syndrome of non-organic growth retardation stems primarily from inadequate caretaking by uncaring and uninvolved mothers should be regarded as an oversimplification of the issues. It may well be that, early in the causal chain of events, provoking maternal behaviours are somewhat different from those that emerge subsequently and that the pace and direction of a mother's influence is determined to a large extent by her child. The unique qualities of that child may lessen its mother's desire to nurture it and to meet its irregular and unusual temperamental needs.¹⁹ These features include physical appearance, cry, and response to affection. Mothers with demanding, growth retarded babies are often tense and anxious, handling them aggressively, whereas slow apathetic infants tend to be ignored.²⁰ Establishing a chain of causation in 'neglect' may thus be problematic, and it does violence to the complexity of the issue to equate a diagnosis made by exclusion with the synonym 'maternal deprivation syndrome' or 'psychosocial dwarfism'. Effective intervention will be facilitated by taking into account the reciprocity of caretaker-child relations. It should be emphasised that all the following comments apply to the primary caretaker of the child; it could be the mother, father, or even an older sibling, within the range of normal family functioning.²¹

Undernutrition as a unifying theme

Evidence currently available suggests that inadequacy of nutrition and feeding difficulties are central to the development of the disorder.²²⁻²³ It is likely that the two interact. For example, insufficient food may initially be provided because of maternal disorganisation, and the child is fed inadequately because mother is unaware of the amount of food actually consumed. She may even perceive him as an excellent eater because, by the time food is offered, hunger leads to a ravenous appetite with rapid ingestion. Intermittent gorging may be associated with poor intestinal absorption. Chronic undernutrition can have the effect of rendering children less vocal and demanding,²⁴ so the problem may be exacerbated insidiously.

Alternatively, the mother of an infant may be depressed or over anxious. Such emotional problems in the caregiver result in a tense child, who consequently does not feed well. The depressed or over anxious mother may perceive her infant's apparent lack of enthusiasm for the nutrition she provides as a critical comment on her. Her mental state may render her intolerant of the behaviour and

as a result she habitually stops the feed prematurely, leaving her child angry and hungry. A vicious cycle thus develops, to which both infant and caregiver contribute.

Consequences

There are three central consequences deriving from a critical reappraisal of the condition non-organic failure to thrive. The first concerns a theoretical issue; the need for a classification of subtypes of failure to thrive to guide investigation and treatment. The second relates to the practical implications arising from that classification, in terms of an overall strategy for assessment and management. The third consequence concerns implications for social policy.

Classification of non-organic failure to thrive. Such a classification must fulfil certain criteria: an acceptable classification must be based on facts, not concepts; it must be defined in operational terms; if it is to be useful it must convey information relevant to the clinical situation; and it must be of predictive value. A knowledge of aetiology is not necessary to construct a useful classification, but for categories to have any scientific meaning they must be shown to differ in terms of course, response to treatment, or some variable *other than the symptoms that define them*.²⁵ A number of attempts have been made to derive a classification^{23 26} but none is satisfactory because they fail to satisfy the criteria outlined above. This matter is thus still wide open for debate.

Evaluation of suspected non-organic growth retardation. Despite the lack of an adequate classification to guide assessment, certain consequences do follow from our present knowledge of the condition. First, the differentiation between *organic* and *non-organic* causes of growth retardation can, and should, be based on positive findings, not on exclusion. A careful history and physical examination should yield powerful pointers in one direction or the other. This discussion focusses upon assessment procedures constrained by the circumstances of outpatient attendance. Laboratory and radiographic investigations rarely produce findings in favour of an organic aetiology that were not anticipated by clinical evaluation. In a minority of those without organic disease, it may be obvious from the circumstances of referral that the child is suffering from the effects of severe nutritional and emotional deprivation; perhaps there is also evidence of physical abuse.² Most cases, however, are merely perplexing to the examining physician.

Physical examination should include very careful measurement of the child's height (or supine length if under 2 years), weight, and head circumference. Cross sectional data are less helpful than longitudinal records when deciding whether anthropometric findings are a cause for concern in borderline cases. Routine child health clinic records rarely contain more than serial weights. Serial lengths and heights would provide crucial additional information. A diagnosis of growth retardation should be made on the basis of a relatively low or decreasing velocity of growth. Absolute values of weight and height at discrete points in time have less importance. Growth velocity, however, is awkward to compute and estimation is error prone, so it is unlikely to be calculated outside specialised growth clinics. A useful technique for assessing the degree of discrepancy between height and weight is to determine 'height age' and 'weight age'; the ages at which measured height and weight would lie on the 50th centile. Children with low growth hormone concentrations tend to have a high-normal weight age to height age ratio.²⁷ Those who have been undernourished will have a low-normal ratio; their weight age is somewhat less than their height age. Large discrepancies, however, are unusual after infancy, except in cases of acute malnutrition, or where catch-up growth in height is occurring at the expense of weight gain. For the same reason most cases of non-organic growth retardation have skinfold thickness within the low-normal range. If a child is light for his height the deficit between actual and ideal weight can be used to estimate the daily caloric intake required to encourage catch up growth.²⁸

A simple standardised developmental assessment is another essential part of the initial evaluation; the Denver scale would be appropriate.²⁹ Non-organic growth retardation is often accompanied by other sequelae of environmental deprivation. Underachievement in skills that rely on environmental stimulation for their normal development, such as social-adaptive behaviour and language, is common. Asymmetric ability, however, in these areas does not constitute *prima facie* evidence of wilful neglect.

When taking the history of a suspected case of non-organic growth retardation it will be necessary to question carefully on caloric intake. Underfeeding at the breast is a likely explanation in breast fed babies who are failing to thrive, and practical advice may suffice to resolve this problem.³⁰ In older children the focus should be on nutrition actually provided, on mealtime behaviour, and on food definitely consumed. This is best done prospectively, using a simple standardised questionnaire, incorporating a diet sheet, which the parents can take away and fill in over a period of one week after

their first outpatient appointment. Some coaching must be given, ideally by a paediatric dietician, on how to complete the assessment. It may then be possible to ascertain any shortfall in daily caloric intake.⁹ Parental cooperation will give a hint as to their degree of concern about the child, and may well show serious disorganisation in family functioning. Older children who spend all day at a nursery or school usually receive meals there; when serious parental neglect occurs school meals may constitute the main source of nutrition. The parents who say their child eats so greedily and indiscriminantly at home or school that it has become necessary to restrict the amount of food provided are, firstly very unlikely to be giving a factually accurate report of behaviour, and secondly are indicating emotional rejection. Issues of food and feeding are intertwined with and responsive to many other dynamics of the mother-child relationship.

Critical observations should be made of interactions between children who are failing to thrive and their caretakers. There will of course be enormous contextual influences on their behaviour. An individual mother-child dyad may be as unlike their usual selves while interacting in the clinic as they would be different from other mothers and children if all were assessed in their own homes. When a child presents with growth retardation, however, for which no physical cause is immediately apparent from the clinical assessment, evidence of problems in the mother-child relationship should be sought. An emotionally rejected, socially deprived toddler may be indiscriminantly friendly and physically affectionate with unfamiliar staff. When distressed or in need of help he may turn as readily to a stranger as to his own mother. A child for whom mother is no source of security may not seek her reassurance in the strange and threatening world of the clinic. Normally mothers are, in this unfamiliar setting, sensitive to signs of their children's anxiety and prompt them with verbal and physical contact to reduce distress. Low visual attention, persistent ignoring of approaches, or frequent critical remarks are worrying signs. Harsh threats and physical punishment are, if observed, unlikely to be confined to the clinic alone. These observations are in themselves merely pointers to a heightened risk of emotional neglect or abuse. It is as well to be aware that abusing and neglectful parents may be perfectly pleasant and cooperative with the examining doctor. This may serve to divert one's attention from the actual mother-child relationship. The reliability of one's observations is enhanced by repeating them in as many other contexts as possible (for example nursery, home).

In addition to growth failure, the neglected child

is likely to have specific delays in language and social skills. Suspicions of delay on screening should ideally be followed up by obtaining a developmental psychologist's opinion, as clinicians frequently overestimate children's abilities in the preschool years. Disturbed social behaviour, especially if evident outside the family, is always a worrying sign; for example the toddler who is scapegoated and rejected by his peers, or who constantly fights with them.

In summary, management of a case of suspected non-organic growth retardation must be guided by findings on a hierarchy of factors that are ranged in their proximity to the individual child. The first item in that hierarchy and the most proximate is nutritional intake, which may be grossly inadequate for a variety of reasons.⁹ The next most proximate factor is likely to be the quality of caretaking provided, or a mismatch between the temperament of the caretaker and that of the child. These influences are likely to have important impact on feeding, for that is where the greatest problems in 'temperament fit' manifest. For instance, a child is a slow and thoughtful feeder but his caretaker is rapid and impatient. Other children, particularly little girls, excel in their manipulative skills; mealtime behaviour exemplifies the remarkable control they can exert over parents who (for whatever reason) lack authority and determination. More distal from the child in this hierarchy are influences that have a direct and adverse effect on the caretaker's ability to function, such as friction in the marital relationship or single parenthood. Interacting with these environmental influences are others of a more general kind, such as poor quality housing, overcrowding, and poverty. Some of these may be remediable, others not, but each requires careful evaluation for its potential contribution to the growth retardation. The implications for management arising from this multidimensional concept of the condition are many, but essentially a multidisciplinary approach is needed—calling on the expertise of those with medical, social work, psychological, and dietetic training.

There are several follow up studies of infants admitted to hospital with non-organic failure to thrive, and despite the lack of comparison groups the results are consistent. There is a substantially increased risk of continued growth retardation and of physical abuse. For instance, Smith *et al*³¹ found 17% of 134 victims of physical abuse had been investigated for non-organic failure to thrive; studies with a three to four year follow up report frequent physical abuse and a significant mortality rate.³² Parental cooperation with outpatient treatment is usually poor, but this depends on the quality and

intensity of assistance offered to the family. Compliance may be as high as 80% over 15 months in well conducted management programmes.³³

Implications for social policy. The emotional abuse of children has received increasing attention in recent years, both in this country and in the USA. Many of the United States mandate physicians to report cases of non-organic failure to thrive to their child protection services.¹⁴ This obligation to report is sustained by evidence of a strong association between non-organic growth retardation and inadequate or distorted parenting. Despite a demonstrable association between undernutrition and emotional disturbance in the mother-child relationship it is surely unjustifiable to presume de facto parental culpability in the matter. Parents are at risk of being regarded as guilty of emotionally abusing their children unless they can prove their innocence. Sufficient grounds to disprove a suspicion of emotional abuse may be hard to find as the prevailing concept is unscientific and, arguably, ethically unsupportable.³⁴ A preferable definition would neither be exclusively parent nor child focussed. Evidence of parental rejection, insensitivity, and neglect should be set in the context of the child's temperamental attributes, developmental attainments, disordered behaviour, and disturbed emotions.

When it becomes necessary to decide whether the state should intervene in a case of non-organic growth retardation and suspected emotional abuse, the intervention must be based on an assessment procedure that has predictive validity. The child must be at serious risk of avoidable retardation of his proper development—whether physical, emotional, or behavioural. The ambit of assessment must be broad, taking into account not only individual parent and child characteristics (and their interaction) but also the response of that family to interventions and its attitude to those who are attempting to ameliorate the situation. Kavanagh³⁴ has proposed statutory reporting of parental refusal of services. Follow up in all cases of serious non-organic growth retardation should detect overt physical abuse or a deterioration in growth rate (failure to maintain expected height and weight velocities); when monitoring the preschool child's development, placement in a full time day nursery should be made wherever possible.

Conclusions

Non-organic failure to thrive has traditionally been regarded as due primarily to maternal rejection and neglect. A critical reappraisal of the evidence on this

thesis suggests a more balanced view of the direction of effects in the caregiver-child relationship should be taken. A sub-classification of the condition, founded on facts not concepts, is urgently required as the basis for empirical studies designed to test traditional hypotheses on aetiology. Follow up studies have emphasised, with remarkable consistency, that—at least with regard to those infants who have been investigated in hospital—there is a substantial risk of continued retardation of growth and development and of physical abuse. A clarification of the causes and correlates of the condition should guide identification of those most at risk and enable more effective strategies of intervention and management to be developed.

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