



Diagnostic procedures and treatment of childhood obesity by pediatricians: ‘The Dutch Approach’



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ABSTRACT

Child Public Health professionals in the Netherlands refer obese children to a pediatrician to check for underlying causes and comorbidity. What happens to these children in terms of diagnostics and treatment when they visit a pediatrician? To get an overview of the diagnostic procedures and treatment methods a questionnaire was developed and sent to all 583 pediatricians in the Netherlands. Data was obtained of 290 pediatricians from 85% of the general hospitals and all (8) academic hospitals. To define childhood obesity Dutch pediatricians most often use the adult Body Mass Index, only 34% use the sex and age specific IOTF-BMI-criteria. 11% of the (non-obese) overweight children visiting a pediatrician have already comorbidities. All pediatricians perform at least weight and height measurements. Waist circumference is measured by only 42%, ninety-five percent measure blood pressure. To treat obese children without comorbidity thirty different intervention programs were reported.

A large variation in diagnostics and interventions of childhood obesity exist. Guidelines in pediatric obesity for diagnostics and treatment are urgently needed.

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1. Introduction

The obesity pandemic has a huge impact on public health. Obesity is associated with serious comorbidities such as hyperlipidemia, hypertension, diabetes mellitus type 2, cardiovascular diseases, liver and gall bladder abnormalities and infertility [1–4]. Many comorbidities are

already evident early in life of children. Asthma, metabolic risk factors, dental problems and psychological disorders are comorbidities encountered in obese children and adolescents [5]. Furthermore, weight status of children tracks into adulthood, therefore preventive strategies should focus on high risk groups [6]. Dutch public health institutions are highly aware of the severity of the problem of childhood obesity.

The organization of the child and adolescent health care in the Netherlands is rather unique. So is the approach to obesity. Curative medicine, like general practitioners and pediatricians, and preventive medicine have separate care systems. Preventive medicine or Child Public Health (CHP) is delivered by well-baby clinics (<4 years) and Youth Health Care services (<19 years), the latter are

Abbreviation: CBO, Dutch Institute for Healthcare Improvement.

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sections of the Municipal/Regional Health care services. At set ages infants/children/adolescents are offered check-ups to assess health, growth and development. This is a national program imposed by the government free of charge. The attendance rate is approximately 95%. At every check-up weight and length/height are measured and plotted in the growth diagrams [7]. Thus, the growth of each child is closely monitored. Since the Third Dutch Growth Study in 1980 the obesity epidemic has become manifest [8–11].

To tackle overweight and obesity in children two specific tools are developed and used within the Dutch Child Public Health: first, the Detection protocol [12], helping to identify overweight and obese children and second the Transitional plan [13] to guide healthy (non-obese) overweight children.

The Detection protocol defined overweight and obesity according to the sex and age specific IOTF BMI cut off points (2–18 years) [14]:

Overweight corresponding to a BMI ≥ 25 to <30 at age 18

Obesity corresponding to a BMI ≥ 30 at age 18

The same definition is used in the Dutch Institute for Healthcare Improvement (CBO) guideline [15]: Diagnostics and treatment of obesity in adults and children [Dutch].

In case of obesity the child is referred to a pediatrician according to the CBO guideline [15] to detect underlying causes and comorbidities. The effectiveness of the Detection protocol for overweight and obesity as used by the CPH is partly dependent on how pediatricians diagnose and treat obese children.

Due to the high attendance rate of 95% the CPH system is very effective in detecting overweight and obese children especially at young age (<6 years). Early detection is known to be a crucial factor for tackling overweight and obesity [16–18]. After referring obese children to pediatricians the process remains largely unclear. According to the CBO guideline it would be expected that obese pediatric patients are checked for underlying causes and comorbidities and receive appropriate treatment.

In the past few years, the problem of overweight and obesity has received much attention from the government which resulted in the involvement of an increasing number and variety of professionals in curative as well as in preventive medicine to combat obesity [19–21]. This diversity resulted in the request from the Netherlands organization for health research and development (ZonMw) to the department of Youth Health Care (YHC) of the EMGO-institute to conduct an inventory amongst pediatricians. The inventory should include the process of diagnostics and the specific interventions for treating childhood obesity where pediatricians are involved.

2. Methods

To get an overview of the diagnostic procedures and treatment methods a questionnaire was developed and reviewed by CPH-professionals and pediatricians. The

Table 1

Criteria to diagnose overweight and obesity used by Dutch pediatricians; $n = 88$.

	Overweight		Obesity	
	<i>n</i>	%	<i>n</i>	%
BMI ≥ 25 kg/m ² ^a	36	41	–	–
BMI ≥ 30 kg/m ² ^a	–	–	35	40
IOTF-criteria ^b	26	30	30	34
BMI > 1 SDS ^c	22	26	–	–
BMI > 2 SDS ^c	–	–	23	26
Weight-for-height $> P97^c$	20	23	22	25
Weight-for-height $> P90^c$	23	23	–	–

Note: Individual pediatricians reported the use of multiple criteria. Abbreviations: *n*, number of pediatricians; BMI, Body Mass Index; IOTF, International Obesity Taskforce; SDS, standard deviation score.

^a Cut-off value for adults.

^b Criteria adjusted for age and sex 2–18 years.

^c Diagnostic tools available from the Dutch Growth studies [7,9,10].

questionnaire addressed aspects like diagnostic criteria, treatment and details regarding specific intervention programs. The inventory was carried out among all pediatricians working in general and academic hospitals in the Netherlands.

All 583 pediatricians practising in general hospitals ($n = 99$) in the Netherlands received a questionnaire by e-mail between June–August 2009. In the eight academic hospitals in the Netherlands one pediatrician with specific expertise in childhood obesity was asked to fill in the questionnaire.

3. Results

Two hundred and ninety (290/583) pediatricians (49.7%) returned the questionnaire. 88/290 pediatricians (30.3%) were specialized in the treatment of obese children. These pediatricians often responded on behalf of the whole pediatric department. Questionnaires were obtained from 84 out of 99 general hospitals (84.8%) and all 8 academic hospitals (100%).

3.1. Diagnostics

Seventy-three (73) pediatricians diagnosed 261 (non-obese) overweight children in the last 4 weeks before the inventory. Comorbidities were reported in 29 children (11.1%).

In the same period, obesity was diagnosed in 279 children by 58 pediatricians; comorbidities were reported in 103 children (36.9%).

Table 1 shows the criteria pediatricians used to diagnose overweight and obesity.

The most often reported criteria to diagnose overweight or obesity in children and adolescents were the adult criteria, BMI ≥ 25 to <30 kg/m² or BMI ≥ 30 kg/m², respectively. Thus for age and sex adjusted IOTF BMI-criteria for overweight or obesity are used by 26/88 (29.5%) and 30/88 (34.1%) of the pediatricians, respectively.

The 88 pediatricians involved in the treatment of obese children reported to measure weight and height. Waist circumference is measured by 37/88 pediatricians (42%).

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