Primary care and public health a natural alliance? The introduction of the guidelines for obesity and undernutrition of the Dutch College of General Practitioners

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The prevalence of obesity and overweight is increasing globally and forms a huge public health problem. On the other hand, the prevalence of malnutrition or undernutrition is substantial, especially in nursing homes or in the elderly at home.

Primary care and public health are separate disciplines. But in the field of nutrition and other lifestyle-related interventions, there are many direct and indirect interfaces for over- as well as undernutrition.

The Dutch College of General Practitioners (NHG) published the Practice Guideline Obesity in adults and children to lead GPs in this process and to bridge the gap with public health. The same applies for the recently published National Primary Care Cooperation Agreement Undernutrition on the collaboration of primary care workers to enhance awareness and early intervention in case of nutritional impairment.

This article goes into the background as well as the content of these two NHG products and the implications for daily practice. An attempt is made to connect primary care and public health in this matter. Particularly in the case of obesity, a close relationship with public health is of vital importance.

Keywords. Obesity, primary care, public health, undernutrition.

Introduction

The prevalence of obesity and overweight is increasing globally and forms a huge public health problem.¹² On the other hand, the prevalence of malnutrition or undernutrition is substantial, especially in nursing homes or in the elderly at home. Moreover, undernutrition was diagnosed in 20% of the children admitted to the hospital.³ Of these children, only 44% were known with an underlying disease.

Although both obesity and undernutrition are major risk factors for morbidity and premature death, health care providers are often reluctant to manage them. They perceive weight management interventions as ineffective and the target group being too large. Moreover, many physicians experience lack of time, resources and knowledge as discouraging.

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Overnutrition

Body weight reduction is an essential part of the treatment of, e.g. diabetes type 2 and cardiovascular risk management. Since primary care is involved in the treatment of many common obesity-related chronic diseases, this setting seems to be an ideal starting point for obesity-reducing interventions. After all, the longitudinal integrated primary care, taking personal and contextual factors of the patient into account, is beneficial for optimal weight management.

However, primary health care providers have to be motivated to support obese patients in achieving lifestyle changes. Organizational and financial support as well as (postgraduate) training might increase the involvement of primary care in the management of the individual obese patient. But primary care cannot execute this task
without strong public health support. Primary care is embedded in the national public health organization, with its own specific surrounding in different countries. Public health initiatives concerning obesity, such as policies about food production, environmental influences, legislation and the availability of lifestyle programs will motivate physicians to provide individual interventions. For example, dietary and physical activity advice by primary care needs to be supported by environmental changes like sport locations, cycle roads, healthy food in schools and at work and sport classes in schools.

On the other hand, personal and contextual factors will influence the ways individuals interpret and apply public health messages, regarding their own health and well-being. Trust in the messenger also plays a role. Individuals give more credibility to sources of information with which they are familiar, for example family, friends or health professionals with whom they have formed a relationship, like his or her GP. Primary care and public health seem to be a natural alliance in the management of obesity.

The Dutch College of General Practitioners (NHG) published the Practice Guideline Obesity in 2010 to lead GPs in this process and to bridge the gap with public health. All NHG practice guidelines are developed in working groups containing GPs, of which some are specialized in the subject. And a selected group of 50 GPs and several related professional groups are consulted when the concept guideline has been prepared. The final guideline is authorized by an independent authorization committee.

Undernutrition
Malnutrition is a result of an imbalance between nutritional loss, in- or uptake and energy expenditure. Undernutrition is primarily used in the context of deficient energy or protein intake or absorption. Causes of undernutrition include chronic diarrhoea, chronic obstructive pulmonary disease (COPD), heart failure, cancer and bad fitting dental prosthesis. Energy expenditure can be increased by fever or other disease-related increased metabolism. Common consequences of nutritional impairment are delayed wound healing, impaired immune function and an increased mortality rate independent of the disease severity. Because of these adverse health effects, undernourished patients have higher consultation and prescription rates, longer hospital stays and a reduced quality of life. Nowadays, nutritional impairment is often noticed in the late stages and thought to be inevitable, especially when disease related. In fact, in an elderly patient, weight loss can be irreversible, since with ageing the normal mechanisms for conserving energy during periods of reduced food intake have been reported to fail. Therefore, regular body weight measurements seem necessary in patients at risk.

In 2010, the NHG published the National Primary Care Cooperation Agreement Undernutrition on the collaboration of primary care workers to enhance awareness and early intervention in case of nutritional impairment. Delegates of the NHG, the Dutch Society of Dieticians and the Dutch Society of Nurses discussed the collaboration in signalling, diagnosing, consultation and referral. The tasks and responsibilities of the groups of professionals in the care for adults with (risk of) undernutrition are described and authorized by the three societies. The natural alliance with public health is not always visible, but the far-reaching consequences of the clinical outcome of malnutrition are obvious.

The NHG Practice Guideline Obesity
In 2010, the NHG published the Practice Guideline Obesity for adults and children. To our knowledge, it is the first guideline concerning the management of obesity focusing on primary care. The aim of the guideline is to promote an optimal management of obesity in adults. For children, the main aim is to signal overweight and obesity at an early stage to prevent an irreversible high body weight with possible co-morbidity.

GPs have an appropriate position in the health care system to signal, diagnose and treat obesity. Patients often consult their GP over longer periods of time, with the result that their context is known. Patients’ environment is crucial in choosing the kind of treatment and advice. Negative images of people with obesity can influence the care provider’s attitude; the care provider should be aware of this. To motivate patients as well as physicians, the guideline points out that achievable targets for weight reduction should be set. Five to 10% weight reduction in adults might yield considerable health benefits. For children, even weight stabilization might be enough.

Diagnosis
The GP examines adults who have co-morbidity that requires weight reduction and adults who have an increased cardiovascular risk. Children should be examined if they have been referred by youth care, if they have diseases or risk factors in which obesity might play a causal role. Children should also be examined if they appear obese, irrespective of the reason of consultation. The GP asks for symptoms of underlying causes (like hypothyroidism), for complaints owing to obesity (like dyspnoea, joint complaints, symptoms of sleep apnoea syndrome) and psychological disorders associated with obesity (like depression, eating disorders). In children, the GP additionally asks for psychosocial problems (like deviant behaviour, being bullied), for the prevalence of obesity and cardiovascular diseases and risk factors in their parents and for abnormal growth curve.
Physical examination comprises the assessment of height, weight and waist circumference and the calculation of the body mass index (BMI). BMI cut-off values for children are age and gender specific and obesity is classified in three grades. The limits are comparable to the following values for adults: BMI 30–34.9 (Grade 1), BMI 35–39.9 kg/m² (Grade 2) and BMI ≥40 kg/m² (Grade 3). In children, the GP also checks the presence of dysmorphic features. Additional blood analyses may be indicated depending on the history (like cardiovascular diseases). In children, only fasting glucose assessment is recommended, if they are 10 years older. Fasting glucose ought to be <5.6 mmol/l.

Treatment

People that are eligible for treatment by the GP are, ‘adults’: (i) with overweight (BMI 25–29.9 kg/m²) and severely increased waist circumference (men ≥ 102 cm, women ≥ 88 cm), who ask for support, (ii) with overweight and an overweight-related co-morbidity, (iii) with women > overweight and an increased cardiovascular risk and (iv) with obesity (BMI ≥ 30.0 kg/m²) and ‘children’ with Grade 3 obesity without increased fasting glucose are eligible for treatment by the GP.

At first, the GP explains that only 5% to 10% weight reduction might result in considerable health gain. Health gain must be the first target, normal weight is (for adults) often not achievable. Weight reduction and weight maintenance require continuous adjustment of the lifestyle factors: nutrition, exercise and cognitive behaviour. In children, the GP explains the beneficial effects of healthy lifestyle without weight reduction on health and the required support of parents and family. The GP also explains that with growing height, weight stabilization may be enough. To support GPs in advising their patient, the NHG has developed Patient Information Letters on Obesity, Nutrition and Exercise to offer the patient.

In consultation with the patient, an individual treatment plan, based on realistic targets, will be formulated. This takes into account the personal motivation of the patient, environmental and contextual factors, earlier obesity treatment(s), medication use, nutritional and exercise habits and psychosocial problems.

The treatment consists of three elements:

1. Healthy nutrition according to the ‘Dutch guideline for good nutrition’. All diets result in a more or less equal weight reduction, but weight maintenance is only possible with permanent adjustment of nutritional habits. If permanent weight reduction and maintenance do not succeed or the patient needs more intensive support, the GP refers to a dietician.
2. Moderate intensive physical exercise for at least 1 hour a day according to the ‘Dutch guideline for healthy exercising’. The GP may refer to local or work-related exercise programs to enhance the exercise intensity. The GP refers to a physiotherapist if the patient has co-morbidity like joint disorders or endurance impairments.
3. Cognitive behavioural therapy, especially if the patient has an emotional or externally driven eating behaviour. The therapy can be provided in general practice, if knowledge is available. The GP refers a motivated patient to a specialized therapist, if specialized care is needed.

The recommended duration of the treatment is at least 1 year. The treatment of children can be executed in general practice on certain conditions, like structural cooperation with dieticians, physiotherapists, social workers, psychologists and pediatricians. Treatment of children will preferably be executed on a programmed basis. Note that medication is not recommended for adults and children with obesity.

The GP checks the progression of the effects of the treatment at least once per 3 months during the first 2 years of the treatment. In case of diabetes or (an increased risk of) cardiovascular diseases, weight and lifestyle issues will be incorporated in the check-ups for these chronic diseases.

Referral

The GP refers adults if there is a suspected underlying cause for obesity requiring investigation in secondary care or if there are symptoms of sleep apnoea syndrome. The GP can refer adults for bariatric surgery if the BMI is ≥40 kg/m² or between 35 and 40 kg/m² in the presence of co-morbidity and if standard nonsurgical treatments have been attempted but have not resulted in weight loss or maintained weight loss. For patients with a BMI >50 kg/m², the GP may consider bariatric surgery as primary treatment.

The GP refers children with Grade 3 obesity, Grades 1 and 2 obesity with increased fasting glucose and symptoms of sleep apnoea syndrome or if there is a suspected underlying disorder.

The NHG National Primary Care Cooperation Agreement Undernutrition

Often undernutrition is not determined until patients are referred to the hospital. It is necessary to improve the nutritional status in an earlier stage.

Signalling

Signalling is mainly the task for district nurses when visiting ill persons in nursing homes or at home. They check high-risk groups with a validated screening tool, e.g. the SNAQ® or SNAQ®+ (Short Nutritional Assessment Questionnaire for residential care or the elderly), that provides three possible scores: normal nutrition, risk of undernutrition and undernutrition.
GPs and practice nurses pay special attention on the presence of (risk of) undernutrition in frail elderly people, people with multiple diseases, multiple medications, chronic illnesses, dental problems, swallowing impairments and people with psychosocial problems or alcohol abuse.

**Diagnosis**

In primary care, undernutrition is diagnosed if one of the following criteria is present: BMI <18.5 kg/m$^2$ for adults, <20 kg/m$^2$ for elderly (>65 years), <21 kg/m$^2$ for patients with COPD, unintentional loss of weight >5% in the last month or unintentional loss of weight >10% in the last half year.

‘Risk of’ undernutrition is diagnosed if one of the following criteria is present: unintentional loss of weight 5–10% in the last half year, not eating for three consecutive days or eating hardly anything or less than normal in the last week.

This implies that even patients with overweight can be undernourished when there is unintended weight loss. Moreover, oedema can disguise undernutrition.

The GP asks for symptoms as vomiting and diarrhoea, unintentional weight loss in the last month or half year, impaired food intake, medication and psychological disorders. He investigates symptoms of underlying diseases. Physical examination consists of the assessment of height, weight and BMI and will be extended if symptoms of underlying diseases are present. Additional blood analysis does not contribute to the diagnosis undernutrition. In the case of the presence of a disease which may be based on nutritional deficiencies, the GP assesses relevant biochemistry.

The dietician investigates the nutritional status, the needed amount of energy and proteins, food-related complaints, eating behaviour, expectations of and motivation for treatment.

**Treatment and referral**

GPs counsel patients with risk of undernutrition and supply them with information on undernutrition and healthy protein and energy-rich food. To support GPs, the NHG has developed *Patient Information Letters on Malnutrition and Nutritional Advice* (see attachments A and B, available as supplementary data in *Family Practice* online). Fortified food could be prescribed by the GP, but in more complicated cases, consultation of a dietician is necessary. Children with undernutrition need pediatric referral. Patients with anorexia nervosa should be referred to the psychiatrist.

The district nurses will monitor food intake and body weight. They contribute to the daily implementation of the dietary advice by the dietician.

People with undernutrition should be referred to a dietician, even when they are also referred to secondary care for diagnosis or treatment of the disease that is responsible for the undernutrition. The dietician will assess the nutritional needs and status of the patient, related to the level of activities. She will give a personalized food treatment program. The promotion of physical exercise is an essential part of this program.

The reasons for interdisciplinary consultation are described in the *National Primary Care Cooperation Agreement Undernutrition*. Finally, a checklist of items was established to be discussed in local gatherings of professionals involved in the care for undernourished people. This can be used to harmonize the national agreement with local circumstances and possibilities.

**Discussion**

The NHG published the *Practice Guideline Obesity* and the *National Primary Care Cooperation Agreement Undernutrition*. These documents provide recommendations for the GP how to tackle obesity and undernutrition in their daily practice.

The GP works individually in a small area of the community. Therefore, collaboration with public health is needed. The management of overweight is probably more allied with public health than the management of undernutrition. The individual GP can hardly achieve positive results in the treatment of overweight, if the environment of the patient is not appropriate to implement lifestyle interventions. There is an interplay between individual-level and environmental factors that determine lifestyle choices and lifestyle habits of people. Dietary and physical activity advice by primary care needs to be supported by environmental changes.

Public health seems to have a lot of opportunities to change the obesogenic environment (Table 1). By legislation, they may diminish or prohibit the marketing of unhealthy food by food companies. It can encourage physical activity by creating a community wherein it is easy or even unavoidable to be psychically active, for example by the presence of cycle roads and sport locations. Schools can be encouraged or even obliged to provide sport classes and healthy canteen food. Public health is also an important player in the field of insurances. Reimbursement of lifestyle interventions on a programmed base should promote this approach enormously. Public health in the Netherlands executes the preventive care for children. They have

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<td>Child protection</td>
<td>Local lifestyle intervention programs</td>
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already successfully managed disease prevention by a high vaccination grade. However, the prevention of obesity and overweight needs to be developed. The same applies to occupational health care. It also has to develop programs to prevent obesity in employees. Cooperation and communication is essential between all professionals, who have to deal with obesity. Hence, the development of a National Primary Care Cooperation Agreement on Overnutrition is desirable.

It is advocated to screen all elderly in general practice for undernutrition, particularly those within high-risk groups. The connection with public health is less obvious than in the case of obesity (Table 2). However, the national alliance is clear considering the organization ‘Meals on Wheels’ for people unable to shop and cook, the community screening programs for elderly, the chain of care in, e.g. COPD. Moreover, since 2009, health insurance companies pay expenses for fortified food if screening for (risk of) undernutrition is positive. Public health provides growth curves for children. In the future, they may provide BMI curves for older people, if the advocated screening of the elderly is implemented. In this case, we emphasize the importance of collaboration between public health and primary care.

**Conclusions**

Overweight and obesity as well as undernutrition have major health risks reaching from directly related pathology, like diabetes, to major complicated factors, like longer hospitalization. Interventions in obese patients are far from easy and the diagnosis of the malnourished elderly is rather complicated. However, the GP will see these patients every day in practice. For that reason, the NHG developed both the practice guideline on Obesity and the cooperation agreement on Undernutrition and corresponding postgraduate education and implementation materials. Particularly in the case of obesity, a close relationship with public health is of vital importance.

**Declaration**

Conflict of interest: MvA received a reimbursement for attending a congress and printing her thesis from sanofi-aventis BV, The Netherlands. Ethical approval: none. Funding: none.

**References**


**Table 2** Primary care and public health are natural alliances: undernutrition

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