Childhood obesity: Who cares?

In 2014, worldwide around 42 million children under the age of 5 were overweight or obese. In the Netherlands, the number of overweight or obese children has doubled since 1980. In 2017, the prevalence of overweight and obesity among Dutch children in primary schools was 13.5% and 2.9% for boys and 12.2% and 3.6% for girls (4-11 years). In Amsterdam, about one in ten children in primary schools (5 and 10-year-olds) were overweight and one in 33 children was obese in 2015. As nationally overweight and obesity is more prevalent in girls compared to boys.

Obese children have an increased risk of being overweight in adulthood, developing diabetes, cardiovascular disease, psychosocial problems, musculoskeletal complaints. Prevention, early signaling and adequate treatment of obesity and related comorbidity are therefore of great importance. Currently the care for overweight or obese children is provided by a variety of health professionals and is fragmented, as coordination between health care providers is deficient. Furthermore, the health care risks for obese children are inadequately identified and monitored.

In 2010 the first National Integrated Health Care Standard for Obesity was published and the Dutch College of General Practitioners launched the evidence-based guideline ‘Obesity’. Both these standards describe that treatment of overweight and obesity in children must consist of (a) an individual health care plan, managed by one health professional in the role of central care coordinator, and (b) a lifestyle intervention on the family level aimed at improving physical exercise, a healthy nutrition and psychological support.

This thesis consists of two parts. The first part describes the steps of the implementation of the integrated health care standard for overweight and obese children, and the role of the general practitioner (GP) within this care. The second part describes epidemiological research on the influence of several environmental factors on childhood overweight and obesity.

The aims of the first part are:

1. To identify barriers and facilitators for parents and their overweight or obese child during and after a lifestyle intervention;
2. To identify barriers and facilitators for health care professionals in the care for overweight or obese children;
3. To investigate barriers and facilitators in the care for childhood overweight and obesity after the implementation of the integrated health care standard.

The aim of the second part is:

1. To explore the influence of environmental factors on childhood overweight and obesity, in a cross-sectional and longitudinal analysis.

PART ONE: Implementation of the integrated health care standard

In chapter 2 we used semi-structured interviews to explore the expectations and needs of both overweight and obese children and their parents, as well as the factors that facilitate and prevent success in making and sustaining lifestyle behavior changes. This study demonstrated that parents and their overweight or obese child expect that they would lose weight by being physically active or by eating more healthily. Barriers to a healthy lifestyle were associated with parenting problems, specifically pertaining to the adoption of and adherence to new rules. Both parents and children lacked support from their (extended) family members. Within their social context, children struggled with being bullied at school. For both parents and children, support from (other overweight or obese) peers was seen as a facilitating factor. To maintain lifestyle behaviour change, overweight and obese children and their parents need support from their (extended) family, school, friends, peers and their GP. The GP should play a role in early identification and identify weight problems in time, discuss weight in a non-offensive manner and provide information on the long-term consequences of obesity.

In chapter 3 a mixed-methods approach was applied using focus groups, semi-structured interviews, face-to-face interviews and an e-mail based internet survey. We identified important barriers to the implementation of the key components of the integrated health care standard: reluctance to raise the subject of weight, lack of time for optimal treatment, unavailability of long-term interventions to refer to; absence of a structured multidisciplinary approach; financial constraints; and lack of feedback from other health care providers. The identified needs for implementation of the standard were: more obesity knowledge and awareness of obesity; financial reimbursement; task rearrangement; feedback of information; and a central care coordinator.

In chapter 4 we described the practicability of the integrated health care standard for overweight and obese children in Amsterdam-West and the experiences of the health care providers during the implementation period. Both quantitative and qualitative methods were used to evaluate the practicability. Working according to the integrated health care standard was unfeasible in this region. The three biggest hurdles were: a) parents and children were difficult to motivate for treatment and additional support; b) the GP could not fulfill the role of central care coordinator; and c) there was a lack of communication and collaboration between the health care providers.

Our findings from part 1 of this thesis suggest that lifestyle behaviour change for overweight and obese children and their parents is difficult to fulfill without support from the (extended) family, school, friends, peers and their GP. Furthermore, motivation of the parents and their children to change their lifestyle behavior is an even more important factor to successfully overcome their weight problem. We can conclude that even when the GP supports overweight or obese children to change their behavior, it does not seem to be enough, for the motivation and behavior of parents and children to successfully succeed in behavioral change. To work according to the integrated health care standard communication and collaboration agreements between health care providers must be fulfilled and it is preferable to have the youth health care professionals perform the role of central care coordinator.

PART TWO: Influence of environmental factors for a child to become overweight or obese

Part 2 of this thesis focused on individual and contextual determinants of childhood overweight and obesity based on an ecological model of health behaviours. In chapter 5 we assessed the influence
of green space, access to a garden and condition of the neighbourhood measured at ages 3–5 years on being overweight or obese at age 7. In addition, we investigated whether parenting behaviours moderated or mediated this influence. Lastly, we evaluated the interaction of socioeconomic status with environmental context. We found that children living in an area with less green space, or less hospitality, and children without access to a garden had a higher chance of being overweight or obese.

In chapter 6 we enhanced our understanding of the causal relationship between environment - comprising level of green space, gardens, crime or multiple deprivation of a neighbourhood - and children’s body mass index (BMI) by exploiting a longitudinal study with repeated measures on individual children and their circumstances at ages 3, 5, 7 and 11. Decrease of BMI was associated with living in an area with more gardens or less deprivation for the entire population. A slight decrease in BMI was seen when children moved to a living environment with more gardens and less crime. We also found that a move to a worse area (more deprivation) was associated with an increase in BMI. All these relationships were modified by education level of the main respondent and the sex of the child.

The findings from part 2 of this thesis imply that parenting and the environment exert independent influences on child overweight/obesity. In addition, families with children living in a disadvantaged area and fewer gardens have a greater chance of developing overweight or obesity over time.