CHAPTER 1

INTRODUCTION
Aim of this thesis

The aim of this thesis was to study associations of perinatal conditions with cognitive and psychiatric problems in later life. Most epidemiological studies on the effects of perinatal circumstances on future (mental) health focus on specific obstetric complications – like complications during delivery, low birth weight, or maternal smoking during pregnancy – as specific risk factors for specific disorders. However, pregnancy and delivery are complex processes, and isolated obstetric complications rare and often accompanied or followed by a number of others. Moreover, perinatal factors can counterbalance each other so that one optimal condition may compensate for another less favourable one.

At the other end of the risk factor – endpoint relationship, psychiatric disorders frequently co-occur or cluster. In 1998, Ravelli and colleagues carried out a random survey of the Dutch population. They found that about one third of all psychiatric morbidity over a period of one to twelve months involved more than one disorder. The percentage of lifetime comorbidity, of course, is higher: almost fifty percent. This means, as Kessler argued, that psychiatric disorders concentrate in a small group of individuals, and that they are not randomly distributed within the population. This suggests that many risk factors for psychopathology are not disorder-specific. Multimorbidity, like symptom intensity and duration, may be a measure of disease severity. Other –more used– indications of disease severity are the chronicity and the duration of symptoms and the degree to which they invalidate a person. In the past, comorbidity of symptoms has hardly ever been considered when determining the severity of psychiatric morbidity. And yet, especially when psychiatric disorders co-occur, the prognosis is poor.

The question arises whether determinants of disease severity, or multimorbidity, differ from risk factors for the onset of isolated disorders. Therefore, in this thesis, effects of individual as well as joint perinatal risk factors, on mono- as well as multimorbidity, were assessed.
Outline of this thesis

The data described in this thesis come from a longitudinal prospective epidemiological study on perinatal complications and mental health later on. Chapter 2 describes the design, subjects, and measures involved in this thesis. Chapter 3 examines the effects of one isolated sub-optimal perinatal risk factor, maternal smoking during pregnancy, on academic achievement and emotional and behavioural problems during childhood. Chapter 4 describes how negative effects of maternal smoking during pregnancy on the child’s cognitive performance can be limited by breastfeeding the child. This illustrates how perinatal factors may counteract each other’s effect so that one optimal condition might compensate for another less favourable one.

Research has shown that pre- and perinatal adversities are associated with minor neurological dysfunctions in children at school age. In chapter 5 associations between minor neurological dysfunctions and learning and behavioural problems in pre-adolescent children are studied. We examined whether specific types of minor neurological dysfunction (MND) are related to specific types of learning and behavioural problems, and whether it is the type or the severity of the neurological dysfunction that matters most. When evaluating the impact of specific types of MND, joint risk factors are studied since the presence of a single sign of dysfunction, such as the isolated presence of a Babinski sign, does not allow for the label MND: Essential to the label MND is the presence of a cluster of signs of dysfunctions. Chapter 6 deals with the effects of joint perinatal risk factors, on non-psychotic emotional and substance use disorders in young adulthood. In addition, analyses were performed of whether these links were mediated by internalising or externalising temperaments in childhood. In chapter 7 a measure is introduced which can capture multimorbidity of more than two disorders: the cluster coefficient. Joint occurrence of more than two psychiatric disorders is no exception, but odds and risk ratio’s – the most frequently used measures of association in research on comorbidity in psychiatric epidemiology - can manage associations between two disorders only. Chapter 8 illustrates the use of the cluster coefficient, applied to psychiatric disorders, in a sample of 258 young adults. Also, effects of individual as well as joint perinatal risk factors on monomorbidity
and multimorbidity are assessed. The ninth chapter places the results of the studies in this thesis in a theoretical framework and chapter 10 contains a discussion of the concept psychiatric multimorbidity. In chapter 11 implications for research and practice are proposed. Finally, chapter 12 discusses the strengths and limitations of the thesis. In chapter 13 a summary of the thesis is given.
References


