The Self-perceptions of Children & Adolescents with Attention-Deficit/Hyperactivity Disorder: The Impact of the School Settings.

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ABSTRACT

The aim of this paper was firstly to empirically investigate the self-perceptions of children and adolescents with Attention-Deficit/Hyperactivity Disorder applying the Self-Perception Profile Scale for Children (Harter, 1985). Secondly the aim was to empirically investigate which factors are influential in a positive and/or negative school experience for this group of children and adolescents. The first study compared the self-perception scores of 19 children and adolescents with ADHD attending a special education school to 20 children and adolescents without ADHD. Overall it was found that there were no significant differences between the groups with regard to self-perception scores. Moreover it was found that years of attendance at a special education school correlated positively with self-perception scores on the behavioural conduct scale and the global self-worth scale. The findings of this study seem to support previous findings, which suggest that children and adolescents with ADHD attending a special education school have positive perceptions of themselves. Theories explaining these findings are discussed and evaluated. Moreover the findings of study I seem to refute the demoralization theory of ADHD and its associated link to depression and thus alternative explanations are emphasised. The methodological limitations, future improvements and practical implications of study I are discussed. The second study empirically investigated the interaction between characteristics of the school and characteristics of the child/adolescent with ADHD and his/her subsequent school experience. Three males with ADHD presently attending a special education school and one male with ADHD attending a public school were interviewed simultaneously with their parent(s). Overall it was found that child characteristics (response to medication and comorbid conditions) interacted with school characteristics (teacher and peer relations and the structure of the school), in determining the quality of the school experience at the public school and at the special education school. The methodological limitations, future improvements and practical implications of study II are discussed. The author strongly urges that further research is carried out on ‘what makes a happy school life for individuals with ADHD?’ since the quality of the school experience can have detrimental and/or positive effects on developmental outcomes and on the quality of life of this particular group.
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INTRODUCTION

Rationale of the study

The aim of this paper is firstly to evaluate the present discrepant diagnoses of hyperactivity and impulsivity in children and adolescent. Secondly it is to describe and evaluate the etiological conceptualisations of attention-deficit/hyperactivity disorder (ADHD), the impact and complex interaction of various risk-factors on the developmental outcomes of children with ADHD and the treatments available to this group of children. Thirdly it is to describe the development of self-esteem and self-perception and to critically evaluate the hypothesised association between self-esteem and depression. Fourthly the author wishes to empirically investigate the self-perception of children with ADHD and empirically investigate which school context if any (public school and special education school) is most beneficial for a child with ADHD and under which circumstances. The findings of this study will be discussed in the light of previous research and the practical implications will be put forward.

As will become evident throughout this paper ADHD is a highly complex disorder, in which most conceptualisations regarding its diagnosis, etiology and prognosis are still at a premature level. The author’s interest in the area of ADHD is not due to first hand personal experience with ADHD. The great interest in this area is firstly due to the complexity of ADHD and the many unanswered questions involving its etiology and prognosis. Secondly it is due to an empathetic concern for the lives of those suffering from ADHD and their significant others. Thirdly it is due to a sense of despair due to the lack of information available to this group as well as the amount of misinformation that may be available to this particular group. An example of misinformation is the fact that any book or leaflet regarding ADHD states that children with ADHD have low levels of self-esteem/self-perception and thus develop depression in 15-75% of cases (Brook, 2000, Brown, 2000, Ezeilio, 1999.). An example of such misinformation is provided by Barber who argues that ‘The cumulative effect of years of negativity and social rejection can lead to low self-esteem and negative self-perception. For school-aged children, social isolation and rejection are devastating because children at this age are undergoing rapid changes in the development of their own value and self-worth. Deficits in social skills can lead to feelings of negativity and result in aggressive and self-centred behaviour that, in later life, may result in depression’ (Barber, 2005, pp. 236).
Another example is provided by Ellison (2002, pp. 10), which argues that ‘Many children with ADHD are exquisitely attuned to the fact that they are not performing up to their peer group, that they are not meeting the expectations of important adults in their lives, and that they are not well liked by their peers. This cycle creates self-doubt and a lack of confidence in one’s abilities, which results in depression. As will become evident in a theoretical discussion this is not an empirically valid conclusion at all. And one can only imagine how such a statement affects the parents and a child with ADHD: they might feel frustrated and loose their hope or the statement might even possess self-fulfilling properties. Moreover the empirical base from which conclusions are drawn regarding the self-esteem levels and self-perceptions of children and adolescents is, as the reader will experience throughout this paper, inadequate, flawed and insufficient. The author thus wishes to empirically investigate the self-perceptions of Danish children and adolescents with ADHD in order to try and establish more valid conclusions regarding this matter.

A vital lack of information available to this group of children and their significant others are: ‘Will my child profit from a normal public school or from a special education school for children with ADHD?’ The school situation can be perceived as a risk-factor, because the mere symptoms of inattention, hyperactivity and impulsivity makes it difficult for the child with ADHD to keep up with academic expectations and makes it difficult to make friends, which heightens the risk of poor developmental outcomes. Hoza (2005) found that 52 % out of 165 children with ADHD from a public school were of rejected status, which emphasises how ADHD can impairs a child’s social skills. Being an unpopular child tends to make the child feel lonely and feel more depressed than popular children (Coie, 1990). An aphorism which immediately springs to the author’s mind is ‘Will children experience the same problems at a special education school as they seem do at a public school? In other words ‘Will the child experience academic failures and social failures as they tend to do at a public school according to research findings? (Barber, 2005, Brook, 2005, Dumas, 1999, Slomkowski, 1995)?’

The aim of this study is thus to try to answer these two questions

- **How do children with ADHD perceive themselves compared to children without the diagnosis?**

- **How do the characteristics of the schools influence the child’s self-perception and quality of life?**

Prior to any attempt of answering these questions let us have a look at the heterogeneous nature of ADHD and its possible influence on the discrepancy between diagnostic systems.

**Attention-Deficit/Hyperactivity Disorder illustrated**

*Amy*: ‘When her parents tell her not to do something, Amy often becomes angry, resentful and beligerent. When told to pick up toys, put her dirty clothes away or get ready for her bath, she pouts or crosses her arms over her chest and says...’
Ricky: ‘Unlike Amy does not have ODD. Yet as is true for many children with ADHD, Ricky’s self-esteem has begun to decline as he chronically underperforms at school and increasingly gets into trouble with other children. The unyielding and unsympathetic view of Ricky’s teacher seems to have contributed to this decline in self-image and certainly makes for a more conflict-filled day. This has led him to the point of being depressed’ (Barkley, 2000).

These illustrated cases of children living with Attention Deficit Hyperactivity Disorder (ADHD) are two out of many possible descriptions and they underline the heterogeneous symptomatology and developmental outcomes of children suffering from the disorder (Barkley, 2000). It is evident that children suffering from ADHD do not display the exact same pattern of symptomatology, nor do they follow the same prognostic pathways due to the disparate influence of various risk-factors (Grant, 2003, Hechtman, 1999). The heterogeneous nature and developmental outcomes of children with ADHD is a great challenge to researchers and clinicians and it emphasises the fact that ADHD is still poorly understood at a conceptual, etiological and prognostic level (Nahlik, 2004). This in turn does indeed have an impact on the development of proper treatment strategies available to this group of children (Butross, 2000). It is of utmost concern that ADHD is still at a conceptually premature level concerning etiology, influence of risk-factors on lifespan development and proper treatment strategies since it is estimated to affect 3-12% of school aged children (DSM-IV, 2004, Faraone, 2005). Moreover it is of utmost concern due to the personal impairments and social costs that can be a consequence of ADHD (Hechtman, 1999). Let us firstly have a look at the diagnostic criteria and the international discrepancy between diagnostic systems, since this discrepancy might explain why conceptualisations regarding the nature of ADHD are still at a premature level. In other words it is difficult, if not impossible, to generalize findings from research carried out on children with DAMP to children with ADHD. The author argues that the diagnostic discrepancy is bound to impair a proper accumulation of knowledge regarding the prevalent disorder.

**Diagnostic discrepancy**

At present there are two acknowledged major classification systems covering the symptomatology of hyperactivity and impulsivity disorder namely The Diagnostic and Statistical Manual of Mental Disorder (DSM-IV, 2004) and The International Classification of Diseases (ICD-10, 2004). Moreover the Nordic countries apply what is referred to as the ‘practice diagnoses’, which is used by clinicians to describe the symptomatology of these children (Krøis, 1995).

The diagnosis applied by the DSM-IV classification system to describe hyperactive, impulsive and inattentive dysfunctions in children is Attention Deficit Hyperactivity Disorder. The diagnostic criteria to be met are as follows:

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1 The author utilizes the ADHD diagnosis in this paper due to reasons, which will become apparent in the proceeding paragraph.
Six or more of the following symptoms of inattention that have persisted for at least six months to a degree that is maladaptive and inconsistent with developmental level. These include that a child fails to give close attention to details or makes careless mistakes in schoolwork, work or other activities, often does not listen when spoken to directly, often has difficulty organizing tasks, is often easily distracted by extraneous stimuli and so on.

either/or

Six or more of the following symptoms of hyperactivity- impulsivity that have persisted for at least 6 months to a degree that is maladaptive and inconsistent with developmental level. These symptoms of hyperactivity-impulsivity include that the child often fidgets with hands and squirms in seat, often leaves seat in classroom settings, often acts as if driven by a motor, often interrupts or intrudes on others and so on.

Furthermore it is expected that the child/youngster/adult has displayed some hyperactive-impulsive or inattentive symptoms before the age of 7 and that some symptoms are present in two or more settings such as work, school and home settings to exclude the possibility of a purely behavioural disorder due to external environmental factors such as relational problems with parents, teachers, co-workers and so on. Furthermore there must be clear evidence of clinically significant impairment in social, academic, or occupational functioning and the symptoms are not better accounted for by another mental disorder such as Anxiety Disorder, Mood Disorder or a Personality Disorder. Last but not least the diagnosis is divided into three subtypes namely Attention-Deficit/Hyperactivity Disorder combined type, predominantly Inattentive type and predominantly Hyperactive-Impulsive Type (DSM-IV, 2004).

The International Classification of Diseases classifies hyperactive, impulsive and inattentive symptoms as Hyperkinetic Disorder. The diagnostic guidelines of the ICD-10 classification system (WHO, 2004) are the following.

The cardinal features are impaired attention and over-activity: both are necessary for the diagnosis and should be evident in more than one situation (e.g. home, classroom, and clinic). Impaired attention is manifested by prematurely breaking off from tasks and leaving activities unfinished. The children change frequently from one activity to another, seemingly losing interest in one task because they become diverted to another. These deficits in persistence and attention should be diagnosed only if they are excessive for the child’s age and IQ. Over-activity implies excessive restlessness, especially in situations requiring relative calm. It may, depending upon the situation, involve the child running and jumping around, getting up from seat when he or she was supposed to remain seated, excessive talkativeness and noisiness, or fidgeting and wriggling. The standard for judgment should be that the activity is excessive in the context of what is expected in the situation and by comparison with other children of the same age and IQ.

Learning disorders and motor clumsiness occur with undue frequency, and should be noted separately when present: they should not, however, be part of the actual diagnosis of hyperkinetic disorder.

The characteristic behaviour problems should be of early onset (before age 6) and long duration. However, before the age of school entry, hyperactivity is difficult to recognize because of the wide normal variation; only extreme levels should lead to the diagnosis.
The so called ‘practice diagnosis’ applied by clinicians in the Nordic Countries only, terms the inattentive, hyperactive and impulsive impairments in children as Minimal Brain Dysfunction (MBD) and/or Deficits in Attention, Motor Control and Perception (DAMP). The description of MBD is as follows:

‘MBD is regarded as an operational diagnosis, requiring signs of both attentional deficit and fine, gross motor or perception dysfunction. It is applied only to children who do not have obvious mental retardation or cerebral palsy’ (Hellgren, 1994).

The description of DAMP is:

Accepted term in the Nordic Countries. Umbrella concept covering various combinations of motor control and perceptual problems in conjunction with attentional problems encountered in children who do not show mental retardation or cerebral palsy (Gillberg, 1995)

These four descriptions are used as terms covering a heterogeneous group of children and it is evident that the core symptoms and associated features differ according to diagnostic classification systems. So what are the practical implications of these various conceptualisations of the disorder?

**Evaluation of the diagnostic systems**

It seems that children displaying these inattentive, impulsive and hyperactive impairments have been thoroughly described in literature and research settings. Unfortunately these disparate descriptions have however prevented a proper understanding of the etiology, development and sufficient treatments of the disorder. In other words, research on children with ADHD is not easily generalizable to children with DAMP, because the two diagnostic terms emphasise disparate core symptoms (Hart, 1995). These children have not received the same diagnosis and do probably not make up a homogenous group and therefore research recommendations and findings are not easily applicable across settings and countries (Krøis, 1995). Thus there is at present no joint international research effort trying to disentangle the complexity of the disorder and accumulate the knowledge necessary for a proper understanding of the disorder and associated proper treatments (Pliszka, 1999). The author argues that any proper understanding of a certain disorder implies an international common agreement on how to describe a certain syndrome and an international common agreement on the diagnostic criteria applied in identifying these children (Rasmussen, 2002). A valid diagnosis applied internationally is a beneficial starting point in conceptualising different aspects of a certain disorder. As Hinshaw (1987, pp. 444) argues: ‘To provide a basis for clear communication, to aid in future research on child psychopathology and to guide professionals toward timely and effective intervention strategies, researchers must pursue classification efforts rigorously’. So which classification system (if any) is most valid and should be applied in research and clinical settings?

**The validity of the diagnostic classification systems**

2 It should be noted that the DSM-IV classification diagnosis of ADHD is becoming the accepted diagnosis of inattention, impulsivity and hyperactivity in Denmark. The DAMP Association in Odense, Denmark recently changed its name to the ADHD Association emphasising this conceptual alteration.
The author argues that the DAMP diagnosis is insufficient and invalid, because it is only extracted from data investigating a sample of 76 children (Gillberg, 1990, Rasmussen, 2002). Furthermore solely 11% of this sample displayed impairments in motor control and thus does not make up a valid diagnostic criteria of DAMP and MBD according to the author and others (Krøis, 1999). The ICD-10 classification of Hyperkinetic Disturbance is mainly descriptive and not as categorical as the DSM-IV classification system (DSM-IV). Both the DSM-IV classification system and the ICD-10 classification system have however accumulated knowledge on large samples ranging from 20000 to 40000 participants and the diagnostic criteria and subdivisions are continuously empirically validated in field trials, ensuring more reliable and valid diagnostic criteria (DSM-IV, 2004, Lahey, 1994, Power, 2004, Smith, 2003). The pro of the descriptive nature of the ICD-10 classification is that it is more flexible and open for a clinician’s subjective interpretation (Krøis, 1995). However the author argues that this subjectivity can impact the reliability of the diagnosis, which in turn impacts the validity of the diagnosis. Despite the fact that the DSM-IV classification system is highly categorical the Research Group of the DSM-IV argues that ‘In DSM-IV there is no assumption that each category of mental disorder is a completely discrete entity with absolute boundaries dividing it from other mental disorders or from no mental disorder. There is also no assumption that all individuals described as having the same mental disorder are alike in all important ways. The clinician using DSM-IV should therefore consider that individuals sharing a diagnosis are likely to be heterogeneous even in regard to the defining features of the diagnosis and that boundary cases will be difficult to diagnose in any but a probabilistic fashion (DSM-IV, pp. xxxi). They furthermore argue that ‘The specific diagnostic criteria included in the DSM-IV are meant to serve as guidelines to be informed by clinical judgment and are not meant to be used in a cookbook fashion (DSM-IV, pp. xxxii). Tripp (1999) carried out a study comparing the correlates of ADHD and Hyperkinetic Disorder and found that the ICD-10 description of hyperkinetic disorder identifies a more seriously impaired and younger subset of the population of children, who meet the diagnostic criteria of ADHD. The practical implications of these findings is according to Tripp (1999) that those countries applying the ICD-10 system may prevent children impaired by inattention and hyperactivity receiving the diagnosis and even worse, receiving proper treatment.

These considerations prompt the author to recommend the application of the ADHD diagnosis across countries in research and clinical settings, considering potential cross-cultural and international differences of course. There are however future improvements to be made: The ADHD diagnosis applied by the DSM-IV classification system is far from perfect and improvements still have to be made in order to increase the validity of the diagnosis. Of particular importance is the fact that the DSM-IV classification system does not consider age changes and its associated changes in symptomatology, as does the ICD-10 classification system (Barkley, 1997, Hart, 1995, WHO, 2004). The symptomatology of ADHD changes with increasing age and this is not taken into account by the DSM-IV classification system yet and it makes it difficult for a youngster or an adult to receive the diagnosis, because they do not meet the diagnostic criteria available (Riccio, 2005). The ICD-10 classification system does consider this aspect; ‘Diagnosis of hyperkinetic disorder can still be made in adult life. The grounds are the same, but attention and activity must be judged with reference to developmentally appropriate norms’ (WHO, 2004). Of further importance is the fact that the ADHD diagnosis does not sufficiently identify females with the disorder, because females tend to exhibit covert behavioural symptoms such as inner

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3 Future research can establish these cross cultural differences if there are any. It is however in the view of the author important for clinicians and researchers to be sensitive to this possibility.
restlessness and not overt behavioural symptoms such as hyperactivity, which are the diagnostic criteria to be met. It is argued in the literature that the male – female-ratio of ADHD is 3 to 1, but this could indeed be an artefact of the diagnosis and not a reflection of the truth.

In conclusion it is argued that ADHD should be considered the most valid diagnosis based on the available evidence thus far, because of its sound research base (large sample) and its continuing validity field trials. Furthermore the ADHD diagnosis seems to be most successful at identifying children with ADHD and thus ensures treatment of this impaired group of children (Tripp, 1999). However the DSM-IV research group still have to consider the age changes in symptomatology and the gender differences in symptomatology. Any firm conclusions regarding the diagnostic validity of ADHD however can be drawn if and when evidence regarding the etiology of ADHD is available and this information is still lacking (Biederman, 2005). The lack of a proper etiological understanding of ADHD has probably influenced the disparate conceptualisations of ADHD and the discrepancy between diagnostic classification systems. It should be noted that no single cause is expected to be found, but a proper understanding of the interaction of the various factors influencing the cause and course of ADHD is much needed. ADHD are syndromes or so called associations of symptoms and it may actually be a blanket term covering a multitude of conditions with a variety of causes. Only future research can accept or reject this hypothesis. Let us turn to the proposed factors responsible for the development of ADHD.

What causes ADHD?

The causes of ADHD have been sought at a genetic, anatomical, neurobiological and at a psychosocial level (Biederman, 2004). It is hypothesised that the additive and interactive effects of these risk-factors is shown to increase the vulnerability to the disorder and not the presence of a single factor (Biederman, 2005). This multi-factorial view of ADHD, which dominates the area at present, does indeed explain the recorded heterogeneity in clinical expression of ADHD (Lauth, 1998, Teeter, 1995). However as will be discussed shortly methodological problems cannot disentangle the exact mode of influence and interaction of each factor (Biederman, 2005). Before discussing this intriguing aspect let us turn to the genetics of ADHD. Is ADHD a genetically transmitted disorder?

Genetics of ADHD and their influence on pathophysiology

Family, twin and adoption studies investigating the causes of ADHD all seem to suggest a strong genetic influence on the development of ADHD. Based on numerous studies of monozygotic twins the mean heritability of ADHD was shown to be .77, which means that genetics account for 77% of the variance of ADHD in the normal population (Biederman, 2004). Adoption studies suggest that ADHD implicate a genetic etiology, based on the observation that the adoptive relatives of hyperactive children are less likely to have hyperactivity or associated disorders than are the biological relatives of hyperactive children (Biederman, 2004). Overall there seem to be a higher genetic predisposition towards ADHD in children from ADHD families than in the normal population (Barkley, 2000). How these genes exert their influence is still unknown, but it is postulated to include a tendency towards abnormal development of the frontal cortex and the basal
ganglia (Baving, 1999, Durston, 2005, Schrimsher, 2003, Sonuga-Barke, 2002, Zang, 2005) and/or the development of abnormal dopamine levels (Barkley, 2000, 2001, Seldman, 2004, Solanto, 2002, Wilcutt, 2006). These brain abnormalities and the abnormal levels of dopamine (genotype) are argued to be responsible for the phenotype of ADHD namely hyperactivity and failure to inhibit behaviour (Barkley, 2000). The neuropsychological view of ADHD as a deficit in executive functioning (EF theory) has arisen from these findings (Barkley, 2004, Sergeant, 2002, Willcutt, 2005). In short the EF theory postulates that ADHD arises from primary deficits in specific EF domains such as response inhibition or a more general weakness in executive control due to the above mentioned brain abnormalities (Barkley, 1997). The EF weaknesses however 'are neither necessary nor sufficient to cause all cases of ADHD’ (Willcutt, 2005, pp. 1343). Moreover research on the genetics and their associated chemical and anatomical abnormalities, intriguing as they may be, do however not explain all cases of children with ADHD, since these abnormalities are not present in all cases of children with ADHD (Joseph, 2000). So what other factors might contribute to the development of ADHD?

**Biological adversity**

Several biological factors have been proposed as contributors to ADHD including food additives, lead exposure, cigarettes and alcohol exposure, maternal smoking during pregnancy and low birth weight (Biederman, 2004). Lead exposure does however not seem to account for the majority of ADHD cases, whereas maternal smoking and alcohol exposure during pregnancy and low birth weight are additional independent risk-factors for ADHD (Biederman, 2004). Other factors such as pregnancy and delivery complications (texasemia, eclampsia, poor maternal health, maternal age, fetal postmaturity, duration of labour, fetal distress, low birthweight) seem to predispose for ADHD. Despite the great number of biologically adverse factors predisposing for ADHD they do however not explain the majority of cases of ADHD (Biederman, 2005). Since neither genetics nor biological adversity theories offer a sufficient explanation regarding the etiology of ADHD, explanations have been sought at an environmental level.

**Psychosocial adversity**

Compelling evidence by Rutter’s Isle of Wight study (1975) revealed that the aggregate of adversity factors rather than the presence of any single factor, lead to psychopathology in children, youngsters and adolescents. These adversity factors include severe marital discord, maternal mental disorder, low social class, paternal criminality and so on. However it is argued that ‘although many studies provide powerful evidence for the importance of psychosocial adversity in ADHD, such factors tend to emerge as universal predictors of children’s adaptive functioning and emotional health, rather than specific predictors of ADHD. As such, they can be conceptualised as non specific triggers of an underlying predisposition or as modifiers of the course of illness’ (Biedermann, 2005, pp. 1218).

So the evidence of psychosocial adversity risk factors as a cause of the development of ADHD is vague. As will become evident shortly in this paper environmental adversity risk factors do however impact the prognostic outcome of individuals with ADHD to a great extent. So what is the status quo of etiological research and what might be concluded from future research?
The status quo of the etiology of ADHD

Figure 1 clarifies the status quo of research on the etiology of ADHD

This conceptualisation does however not explain all cases of ADHD. So perhaps there is an unknown number of factors, may they be genetic, physiological or psychosocial in nature, not yet identified, which are responsible for the development of ADHD? This possibility is illustrated in Figure 2 (Teeter, 1995).

A third possibility is that these various factors are responsible for different subtypes of ADHD or disorders not yet identified, as is shown in figure 3 (Nigg, 2004).
Or perhaps these various factors interact in an accumulative and complex manner in order to produce a certain outcome (disorder/outcome) as is shown in figure 4 (Milich, 2001)

![Figure 4 Hypothetical conceptualisation of ADHD](image)

These various possibilities underline the fact that the causes of ADHD are still at a premature level and that solely future research can establish, which hypothesised model (if any) is applicable. So how come research regarding the etiology of ADHD is still at a premature level? The answer to this question is probably to be found in the methodology of the research area.

**Methodological problems in research on the causes of ADHD.**

Knowledge regarding the etiology of ADHD is at present extracted from research applying retrospective studies. The problems with retrospective studies are first of all its reliance on memory, which, without going into too much detail, is imperfect (Young, 2003). Secondly it is not possible to disentangle the importance of each factor (especially psychosocial factors) and least to say at achieving a proper understanding of the underlying processes (Young, 2003). Thus the author argues that the use of longitudinal, intensive and prospective studies (despite its shortcomings such as great costs and potential small sample sizes) would greatly contribute to the accumulation of knowledge regarding the causes of ADHD (Young, 2003). This of course will have a positive impact on the success of preventive and intervention strategies available to this particular group (Young, 2003). An area in which prospective studies have been applied to a great extent within ADHD research is the area of prognostic outcomes. It is a well established fact that children diagnosed with ADHD follow quite distinct heterogeneous developmental pathways (Hechtman 1999, Trillingsgaard, 1995).

**The heterogeneous developmental outcomes of ADHD.**

Hechtman (1999) argues that there is no single outcome for children with ADHD and suggests that there are three groups in adulthood: a) those who function as well as those without a childhood history of ADHD, b) those with significant psychopathology, and c) those who have some difficulties with concentration, impulse control and social functioning. These various outcomes are influenced by different risk factors and each will be considered separately for clarity to the reader.
However, it is stressed that these do not operate independently or in a unidirectional and causal fashion (Hechtman, 1984, Levy, 2001, Weiss, 1993), as will be illustrated shortly by the Central Hypothesis of Conceptual Model (Grant, 2003). On the contrary these risk-factors are thought to operate in an accumulative and additive manner and interact in a bi-directional fashion (Grant, 2003, Loeber, 1991). The risk factors which have been found to influence the prognosis of children with ADHD are child factors (IQ, symptom severity, temperament, comorbidity and coping strategies), family factors (SES, parental mental health, home environment) and social-academic factors (school performance, peer relations and relation to teachers). Each factor cluster will be considered separately, but the reader is encouraged not to view these risk-factors as independent factors: It is to be perceived as a complex interaction between various risk-factors, which influence and are influenced by other risk-factors (Grant, 2003).

Child factors

The first risk-factor to be considered is IQ. Children with ADHD have been found to display heterogeneous IQ levels ranging from low levels of IQ to high levels of IQ (Barkley, 2000). Research suggests that children with ADHD and low levels of IQ seem to predict academic underachievement and subsequent enrolment in special classes, which is associated with more emotional problems in adolescence (Hechtman, 1999). Furthermore low IQ levels have been associated with more alcoholic symptoms in young adolescence and the manifestation of antisocial personality disorder (Hechtman, 1999, Davids, 2005). On the other hand it has been found that high levels of IQ can act as a protective factor and can predict a more positive developmental outcome such as normal and/or high academic achievement and the absence of comorbid psychopathology in adolescence (Hechtman, 1999). It is once again stressed that the level of IQ is not an independent factor, which is responsible for any given prognostic outcome (Grant, 2003). It is the interaction of this specific factor and other factors, which influence any given outcome (Grant, 2003).

The second risk-factor of importance is the temperament of the child. Early personality characteristics such as over-activity, inattention, negative mood and inability to adapt have been found to increase the risk of these children developing persistent ADHD and associated outcomes into their adult years (Barkley, 2000, White, 1999). It has also been found to impair the quality of the parent-child interaction which, as will become evident, can have severe consequences for the well-being of the child and his/her parents (Fischer, 1993).

The third risk-factor to be considered is symptom severity. It seems self-evident that symptom severity is positively correlated with prognostic outcome. However, it is especially the symptom of hyperactivity, which seems to predict negative prognostic outcomes (Babinsky, 1999, Fisher, 1993, Hinshaw, 1987, Weiss, 1993). Children with severe symptoms of hyperactivity have been found to exhibit more anti-social acts, have lower self-esteem, show more cases of comorbid conduct disorder, perform poorly in academic settings, complete less education and engage in more delinquent acts, than controls (Barry, 2002, Brook, 2005, Lambert, 1987, Weiss, 1985). The onset of symptom manifestation has also been found to influence the prognosis of children with ADHD. Thus it seems that early onset of symptoms and severity of symptoms increases the likelihood of a child with ADHD engaging in delinquent, anti-social and aggressive behaviour (Barkley, 2000, Campbell, 1984, Fischer, 1993, Lambert, 1987).
Comorbidity is the fourth risk-factor, which influences the prognostic outcome of children with ADHD (McArdle, 2004). It has been recognized that children with ADHD and a comorbid condition such as conduct disorder and/or depression tend to have a more negative outcome than children with pure ADHD (Hansen, 1999, Hechtman et al., 1984, Hechtman, 1999.). Firstly ADHD with comorbid conduct disorder has been identified to be responsible for higher levels of family disruption, peer rejection, substance abuse and antisocial behaviour (Babinsky, 1999, Biederman, 1995, Faraone et al., 2001, McArdle, 2004). Even worse is the fact that comorbid conduct disorder has been associated with higher levels of criminal activity and suicide in young people with ADHD (Hechtman, 1999) Comorbid depression due to a longstanding history of failure in academic and interpersonal settings, has also been associated with greater levels of substance abuse and suicidal tendencies (Young, 2003).

The fifth risk-factor: maladaptive coping seem to be a possible precursor to the development of comorbid depression and/or conduct disorder (Young, 2004). As already mentioned children with ADHD seem to be at risk of developing depression and conduct disorder in later life (Young, 2003). The process by which this occurs could be that since children with ADHD are unable to adapt to and cope with (low self-efficacy) social and academic settings and tend to perceive situations negatively they learn to embrace these maladaptive coping strategies, which may render these children even more aggressive, isolated, misunderstood and rejected (Barkley, 2000, Teeter, 1995, Young, 2003, 2004). However there might be alternative explanations, as will be discussed later in this paper.

It might be misleading to term these risk-factors as child factors, because one might get the impression that these factors are solely endogenous to the child. Thus it is once again stressed that these factors influence and are influenced by other factors such as family and social-academic factors: **It is the interaction between these parameters, which determines any particular outcome.** Thus one cannot conclude that the temperament of the child inevitably will result in ADHD: A warm and understanding family environment, high levels of IQ and so on might act as protective factors (Faraone et al., 1998). Another example is the fact that comorbid conditions do not automatically develop due to the mere presence of ADHD symptomatology in a child: The risk of developing comorbid conditions is elevated by other factors such as parental psychopathology, maladaptive coping mechanisms and the quality of interpersonal relationships (White, 1999). Let us now turn to risk-factors, which have been termed family factors.

**Family factors**

The first risk-factor is the social-economic status of the family. Low SES of the family has been found to predict poorer education resulting in low SES of the child in adulthood and more frequent police involvement (Hechtman, 1999). Furthermore low SES of the family has been found to predict the persistence of ADHD symptomatology and its associated outcome of poor social functioning through the unavailability of appropriate treatment options (Hechtman, 1999). The process by which this distal factor can have a detrimental effect is

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4 The reader is encouraged to treat this causal hypothesis with caution, since it is not an empirically valid conclusion, despite its great acknowledgement in the area of ADHD and depression.

5 This might only qualify to countries in which social benefits are not as readily available as they are in Denmark. Social services available to children with ADHD in Denmark will be discussed shortly.
through its impact on the parents and their mental health: Low SES of the family tends to elevate the risk of parental psychopathology and poorer mental health (Barkley, 2000). It is the mental health of the parents and how it affects the parent-child interaction, which will be discussed in the subsequent paragraph.

Firstly parental psychopathology has been found to be associated with psychopathology in the child (Faraone et al., 1998, Frick, 1999). Frick (1999) investigated the relationship between child and parental psychopathology and found that parental externalising disorders were associated with child externalising disorders and parental internalising disorders were associated with child internalising disorders. However parental psychopathology not only elevates the risk for children with ADHD to develop comorbid disorders, but it also influences the home environment in which a child with ADHD is being raised (Teeter, 1995). It seems that psychopathology of a parent influences his/her parenting skills and the persistence of ADHD symptomatology in the child (Frick, 1999). However it has also been suggested that the stress associated with raising a child with ADHD can elevate the risk of developing psychopathology in the parents in the first place (Frick, 1999). Stress associated with bringing up a child with ADHD in parents without psychopathology also affects the way in which parents interact with a child: Parents might show less warmth and praise of a child, which in turn causes the child to be even more disruptive and the cycle starts anew (Barkley, 2000). All in all the quality of the parent/child interaction seems to be vital for adult outcome (Woodward, 1998). Mental health of the parents has shown to affect the quality of their parenting skills, which in turn can influence the persistence of ADHD symptomatology in the child and associated outcomes (Frick, 1999). Moreover the mental health of the parents can influence the persistence of ADHD through its impact on treatment, as we will see shortly (Barkley, 2000, Biederman, 1995). Poor parenting and a dysfunctional home-environment can result in a negative adult outcome: However it can also act as a protective factor for the child, if the mental health of the parents is intact and the home environment is supportive (White, 1999).

Once again it becomes evident that the heterogeneous life-span development of children with ADHD results from a highly complex interaction between child and family risk-factors. They act on and are influenced by each other in a highly complex manner. The final factors to consider are the social-academic factors.

**Social-academic factors**

The first risk-factor to consider is the school-situation and how it affects a child with ADHD. It has already been illustrated how severity of symptoms, parent-child relationship and IQ can have an effect on academic performance and associated adult outcomes. The school situation is considered to be a severe risk-factor for children with ADHD: The mere presence of ADHD symptoms of inattention, hyperactivity and impulsivity makes it difficult for the child to keep up with academic expectations (Trillingsgaard, 1995). Poor academic achievement has been associated with more school dropout, enrolment in special classes programs, lower SES in later adulthood, antisocial behaviour, low self-esteem and psychopathology (Barkley, 2000). Another problem, which children might encounter when starting school is the risk-factor of peer rejection (Whalen, 1990). Children with ADHD often seem to be rejected by their peers due to their intrusive and hyperactive behaviour and their inability to reciprocate and share (Barkley, 2000) Furthermore it has been found that children with ADHD seem to have social judgment information processing deficits, which
complicate the matter even more (Whalen, 1990). The risk-factor of peer rejection has been associated with social isolation, low self-esteem, depression, aggression, delinquency and substance abuse (Coie, 1992).

**Heterogeneity explained**

It seems that there is great overlap between certain risk-factors and associated outcomes for children with ADHD. This is due to the fact that it is the additive and cumulative effect and magnitude of various risk-factors and not a particular variable, which is responsible for any adult outcome (Hechtman et al., 1984, Keller, 1986). In other words: It is the accumulation of certain risk-factors and the presence and/or absence of certain resilient/protective factors, which influence the prognosis (Rutter, 1985).

![Figure 5 ‘The Tree of Life’ Model (Loeber, 1991)](image)

The Tree of Life Model by Loeber (1991) illustrates this point of contention perfectly. The Tree of Life Model postulates that children, despite receiving the same diagnosis, might develop differently. Child A, despite having ADHD, might have a high IQ, a supportive home-environment and high social status and thus follow a positive developmental pathway (C). Another child, child B, with
ADHD might be raised in an unsupportive home-environment and perform poorly at school and thus follow a poor prognostic branch on the Tree of Life (A). The model of Loeber (1991) emphasises the fact that these risk-factors interact and heighten the risk of a certain outcome. **Thus it is a probabilistic assumption and NOT a deterministic assumption.** Incorporated in the model by Loeber (1991) is furthermore the theory of Bronfennbrenner (1979) of ecological development, which postulates that development and psychopathology is a result of a bi-directional interaction between macrosystems (government policy), exosystems (parents’ conditions of employment) and mesosystems (links between microsystems such as school and home environment). Thus the psychopathology of any individual is to be considered within and across these systems. The shortcoming of these theories, despite their ingenious descriptive properties, is their lack of explanatory mechanisms. The theories describe how psychopathology is influenced by various systems (Bronfennbrenner, 1979) and how different developmental outcomes are formed (Loeber, 1991). However the underlying explanatory mechanisms are neglected. Let us turn to the Central Hypothesis of Conceptual Model by Grant (2003), which incorporates the underlying mechanisms in its conceptualisation of psychopathology and development (Mediators).

**The Central Hypothesis of Conceptual Model**

The model by Grant (2003) is a descriptive and explanatory model, which is capable of explaining both development of psychopathology and prognostic outcome, which has great value within the realm of treatment of and/or prevention of psychopathology.
One way of conceptualising the development of psychopathology and a hypothetical developmental outcome such as comorbid conduct disorder applying this highly complex model is as follows: If a child is exposed to complications during birth he or she might develop abnormalities in the prefrontal cortex and associated abnormal levels of dopamine, which are responsible for the core symptoms of ADHD. ADHD symptomatology might in turn influence the social processes such as the interaction between the child with ADHD and his/her peers, because of the child’s intrusive behaviour. The interaction between the child and the parents might also be impaired due to the stress experienced by raising a child with ADHD (Woodward, 1998). The parents might not praise their child, due to the child’s hyperactive acting out behaviour, which might render the child even more disruptive, thus maintaining a dysfunctional parent-child relation (Woodward, 1998). The child may develop a poor self-image due to the child feeling rejected and misunderstood by his/her surroundings. This in turn might influence the child’s coping style in various ways: the child might become aggressive towards significant others because he or she interprets the intention of others as hostile and this might heighten the risk of comorbid conduct disorder (Milich, 1984). This model thoroughly explains the hypothetical pathways to the development of psychopathology and prognostic outcomes. The strength of the three models (Bronfennbrenner, 1979, Loeber, 1991, Grant, 2003) is firstly their value in the realm of intervention. It emphasises the fact that ADHD and possible prognostic outcomes is a dynamic process in which the child’s development and prognosis is influenced by a complex interaction between societal (society, school etc), personal (child

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**Figure 6 The Central Hypothesis of Conceptual Model (Grant, 2003)**

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<tr>
<th>Moderators</th>
<th>Stressors</th>
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<td>Temperament</td>
<td>Biological conditions (genetics, birth complications, ADHD)</td>
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<td>IQ</td>
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<td>FS</td>
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<td>CDD</td>
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<tr>
<td>School situation</td>
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<td>Anxiety</td>
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<td>Temperament problems</td>
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<td>Antisocial personality disorder</td>
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<th>Mediators</th>
<th>Coping styles/cognitive style</th>
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<td>Nonverbal interaction</td>
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<td>Peer-children interaction</td>
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<td>Internal development of FC and DA levels</td>
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characteristics) and social (social relations) factors. It furthermore highlights the fact that living with ADHD can have detrimental effects on the child (poor prognosis), the family (parental psychopathology, stress) and society (delinquency, prison stays, hospitalisation) if it is not properly treated (Babinsky, 1999, Faraone, 2000, Lynch, 2005, Vermeiren, 2000). So which treatments and strategies are available to this group of children?

**Treating ADHD**

The pharmacological treatment of ADHD is through the administration of psycho-stimulant drugs such as Ritalin and Dexidrine, which are thought to increase dopamine in the synaptic cleft (Althoff, 2003). This in turn affects the core symptoms of ADHD and increases vigilance, decreases impulsivity and improves performance on working memory tasks (Althoff, 2003, Denney, 2003). The side effects of these drugs are thought to be mild such as reduced appetite and sleep disturbance (Althoff, 2003). So how effective are these drugs? Connors (2002) carried out a meta-analytic study and found that psychostimulants do have a significant clinical impact on the core features of ADHD and he highly recommends the use of these. However Baldwin (2000) argues that since the exact cause of ADHD is unknown and the exact mechanisms and long term side effects of these drugs are inconclusive it is unethical to administer these. Last but not least Abikoff (1992), Baldwin (2000) and Rapport (2001) argue that the psycho-stimulants do not target the peripheral problems of ADHD and thus recommends combining psychosocial interventions and psycho-stimulant drugs in the treatment of ADHD. It is the psychosocial interventions which we turn to next.

At present the psychosocial intervention methods available for children with ADHD consist of behavioural techniques applied in the home and school setting mediated by significant others. The application of behavioural techniques in the home is obtained through parent management training (PMT). PMT comprise between 8 and 20 individual group sessions in which parents are taught to implement behavioural techniques in their everyday parenting strategies. Firstly it involves implementing a token system and the use of praise and other rewards to increase desirable behaviour such as homework completion, good social interaction with peers and avoid misbehaviour (Barkley, 2000, Pliszka, 1999). Secondly it involves the use of ignoring and ‘punishment’ such as token fines and time out (Barkley, 2000, Carlson, 2000, Johansen, 2005). At first glance PMT might seem like a straightforward technique: It does however require a lot of motivation from the parents and parents who suffer from psychopathology do not qualify as candidates (Pliszka, 1999). In the case of parental psychopathology it is essential to offer individual therapy to the parent/s before addressing the problems of the child (Pliszka, 1999). No matter which route is taken the overall purpose of intervention is to alleviate the problems experienced by the child, which can be done through improving social skills, improving academic achievement and very importantly improving parent-child interactions. Behavioural techniques applied in the school setting are mediated by the teacher and/or class mates. It comprises of the same behavioural techniques as in PMT targeting academic problems, problems with peers and behavioural problems. It does however require that great resources are available to the teacher and that the teacher has a great understanding of ADHD (Pliszka, 1999).

The findings of research on the effectiveness of pharmacological and psychosocial interventions seem to suggest that the best treatment of ADHD comprise of a combination of both (Rapport,
2001, The MTA Cooperative Group, 1999). However instead of adopting a normative approach reciting effectiveness studies on psychosocial treatments (the reader is referred to Danforth, 2005, Greene, 2001, Harwood, 2001, Hoza, 2001, Hyun, 2005, Keen, 2004, Mangina, 2003, MTA, 1999, Swansson, 1999, Wells, 2000) the author argues that an idiographic approach is to be preferred. The child should be evaluated across the ecological systems (Bronfennbrenner, 1979) and at a moderator and/or mediator level (Grant, 2003) so that intervention and preventive strategies are tailored according to the child’s specific needs (Abikoff, 2001, Barkley, 1992, Carlson, 1995, Clarkin, 1992, Hechtman, 2005, Rapport, 2001, Tamm, 2005). Thus if a child is experiencing a dysfunctional parent-child interaction due to the child’s ADHD and possible parental psychopathology, an optimal treatment option could be to treat the ADHD of the child of course, but also the psychopathology of the parents in order to improve the parent-child interaction and lessen the risk of possible comorbid disorders. It is important that the clinician evaluates the child across systems and at a moderator and mediator level in order to grasp the complexity of a given child’s problem areas. A proper understanding of the complex nature of a child’s disorder and problem areas, will heighten the chances of proper treatments and heighten the quality of life of these children and their significant others (Greene, 2004).

**A temporary sum up**

Thus far it should have become evident to the reader that ADHD is a highly complex disorder that impairs a child in social, academic and personal domains. It should furthermore have become apparent that no one child with ADHD is experiencing the exact same symptomatology or follow the exact same developmental pathway due to the heterogeneous nature of the disorder. Last but not least it should also have become evident that ADHD can impair the child in diverse areas, which in some cases can result in a poor prognosis such as comorbid disorders. It should be stressed however that a child with ADHD, who is brought up in a nurturing understanding environment, and attends a school, where his/her disability is shown consideration, can follow a more positive developmental pathway (Bussing, 2000). These descriptive cases are however hypothetical at this stage, because little is known about the exact etiology of ADHD and little is known about the exact influence of the identified risk-factors thus far. Thus future research should focus on identifying the causes of ADHD applying prospective observations and neurobiological devices and focus on identifying the exact influence of risk-factors on developmental outcome applying longitudinal prospective observational studies. It is clear that living with ADHD is impairing to the child, the family and can have potential social costs. These methodological improvements in the area of etiology and developmental outcome are vital and have indeed been long awaited for.

The author argues that findings regarding the etiology (genetics, biology) of ADHD can probably be generalized cross-culturally (inferred from international research), whereas various risk-factors and their influence on the prognostic pattern are probably more culture-specific and needs to be evaluated on the basis of a given country’s policies, values and beliefs. Let us now turn to the opportunities available to children with ADHD and their families in Denmark.
What are the conditions of ADHD in Denmark?

As already mentioned it is vital to consider the system in which a child with ADHD lives. It is important that this group of children is offered the most appropriate opportunities in social, academic and personal settings. So does the Danish Government policy rest on evidence based knowledge?

The social services available for children with ADHD and their families are tailored according to the individual families needs. The family might receive financial support in order to cover medical expenses, parental education, lost earnings due to the disorder such as hospitalisation, treatment and transport (Social & Service Loven, 2006). Thus the risk-factor of low SES might not be applicable to a country such as Denmark, because services are more readily available. In other words the macrosystem (government policy) does indeed seem to have a positive effect on the microsystem (home environment, financial situation and treatment of ADHD). The author does however not neglect the fact that the parents of a child with ADHD have to work hard on obtaining the assistance they are entitled to. It can be a laborious and frustrating process and it may take several months or even a year until the family receives the entitled social support from the social system. However in contrast to the British Government Policies the Danish Government Policies accommodate more sufficiently for children with ADHD and their families. In the United Kingdom a child with ADHD and his/her family will receive financial and medical help through their insurance only (unless they decide to be put on a waiting list, which is up to 4 years long) and it is evident that families of lower social-economic status cannot afford insurance and this might impact the prognosis in a negative manner. This cross cultural illustration emphasises the fact that the impact of certain risk-factors differs cross-culturally and thus need to be investigated in a culture sensitive manner.

The education opportunities available to this group of children do however differ across counties (Social & Service Loven, 2006). One child might attend special education classes at a public school, another child might receive special tutoring, a third child might attend a special education school on a full-time basis and a fourth child might attend public school only. What a child is offered depends on the conditions and availabilities of a given county and on the judgment of a social worker in that particular county. And thus far there is no evidence based knowledge, which recommends, which offer is appropriate for a given child. It is however the mentality of the Danish Government that the public school is capable of integrating children with specific needs and disorders into ‘normal’ classes (Lov om Folkeskolen, 2006), which is termed ‘the containable school’. There is however two problems associated with this way of perceiving the capacity of public schools. Firstly is the teacher capable of considering the child’s needs? It is well established that children with ADHD needs special conditions in order to learn new information and in order to behave in an appropriate school manner (Hunter, 2003, Pliszka, 1999). In brief they need to be near the teacher, away from distracters, the teacher needs to give simple directions about the task, have a formalized plan of action if the child does not follow directions-10 seconds of compliance and consequence, break assignments into small parts, give frequent feedback and so on (Kutcher, 2004, Pliszka, 1999). Is this possible in a 45 minute lesson with 27-28 pupils in one classroom? The answer seems to be no. Thus it seems that the micro system of school can have a negative impact on the home environment of a child with ADHD. The child might be frustrated due to the poor learning environment and the stress of the child might negatively influence the parent-child interaction (Bronfennbrenner, 1979).
The second problem to consider is whether the teacher possesses knowledge and understanding of a child with ADHD. The teacher education degree in Denmark does not incorporate education regarding special needs of children suffering with certain disorders such as ADHD in the teaching curriculum. In other words a person might graduate as a teacher without any qualified knowledge, as to how a child with ADHD is identified and subsequently diagnosed and how a child with ADHD needs to be shown special consideration in the classroom context. The ADHD Organisation in Odense have informed the author that the organisation holds informative education meetings for teachers every three weeks, which informs the teachers about ADHD and how these disabled children should be shown consideration both personally, socially and academically. The turn up however is unfortunately close to zero. Brook (2001) carried out a study on the importance of teachers’ and pupils’ knowledge of ADHD on the school experience of children with ADHD. Overall it was concluded that: the classroom environment of these handicapped individuals should be more conducive for the appropriate treatment of these handicapped individuals. Daily school activities should not be stressful or oppressive for these handicapped individuals. Properly trained instructors should discuss topics on ADHD with the pupils in the classroom as part of their regular curriculum and teachers should undergo continuing education on subjects, such as ADHD, which may be considered a neurological condition and not a lack of motivation by these handicapped individuals. Teachers should set a good example by treating these pupils with patience and consideration. The compassion of their peers, as well as encouragement by their teacher, will decrease the potential risk of these individuals drooping out of school (Brook, 2001, pp. 36). Furthermore and of great importance is the conclusion that ‘school and health authorities should play a part in enabling these children and adolescents, diagnosed with ADHD, to achieve successful education, to experience regular social interaction and to regain self-esteem (Brook, 2001, pp. 36). Thus it seems that the public school is not as containable as Governmental Officials and other authorities emphasise and thus the practical implication ought to be Policy changes in this area. The author is convinced that the reader will be enlightened by the present detrimental reality of these children in Denmark, when reading the interviews (See Appendix). Viewed from the perspective of Bronfennbrenner (1979) the macro system of Government Policies such as the curriculum for teachers can have an unfortunate impact on the microsystem such as the school conditions of a child with ADHD. This in turn can have an influence on the microsystem such as the home environment and the parent-child interaction.

Choosing from an array of interesting dimensions

It seems that the complex interaction between different systems and between different risk-factors can have both a positive and/or a negative impact on children with ADHD. The positive and/or negative impact exerts itself in areas such as academic performance, social interaction, the personal sphere and so on. And whilst the motivation of the author would be to disentangle the complexity of these issues in one grand research project, this is of course not feasible. As already mentioned the author’s concern regarding the possible misinformation available on self-perception and its hypothesised association with depression has led the author to investigate this particular aspect of children with ADHD. The author views self-perception as a vital aspect, since it influences the overall quality of life of an individual. Self-esteem (especially self-acceptance) is essential for

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This information is not based on statistics, but on hear say. Thus the author reminds the reader to treat this statement with caution. However the author argues that such statistical records should be kept in order for the Danish Government to ensure that all is done to improve the academic, social and personal contexts of children with ADHD.
individuals’ life satisfaction and mental health (Cheng, 2003, Kim, 2003). Furthermore it is vital to empirically establish the self-perception and self-esteem of children with ADHD, since low self-esteem has been associated with depression, suicide, delinquency, substance abuse and poorer academic outcome (Zimmerman, 1997). Consequently, the successful development of a positive sense of self-worth may help enhance healthy outcomes or protect youth from engaging in problem behaviours (Zimmerman, 1997). Furthermore self-esteem may be viewed as part of a risk/protective mechanism, wherein the protective factor (eg. self-esteem) helps limit the potential negative effects of a risk factor (family discord, peer pressure etc). Thus it is of great importance to try to establish the self-perception of children with ADHD in order to provide the child and his/her family with valid information. And if the international conclusions drawn about children with ADHD and poor self-perceptions are indeed valid and applicable to Danish children with ADHD, further national research is required in order to fully establish the factors responsible and possible practical implications should indeed be considered and operationalized.

We turn now to the area of self-perception: its definition, its development and its association with depression in particular. Subsequently research on self-perception of children with ADHD will be outlined and evaluated.

**Definitions of self**

Harter (2003) defines self-perception and self-representations as: attributes or characteristics of the self that are consciously acknowledged by the individual through language- that is how one describes oneself (pp.3). In other words self-perceptions are how a person views his/her sense of adequacy across specific domains such as the academic, social, athletic domain and so forth (Harter, 2003). It might also be how a person views his/her global characteristics such as ‘I am a worthwhile person’. Thus it is the overall evaluation of one’s worth or value as a person (Harter, 2003). With regard to terminology global self-perceptions have typically been referred to as self-esteem, which is defined by: the evaluation which the individual makes and customarily maintains with regard to him or herself: it expresses an attitude of approval or disapproval toward oneself (Stamatakis, 2003, pp. 58). Thus the description of a person with low self-esteem is a person who ‘lacks respect for himself, considers himself unworthy, inadequate, or otherwise seriously deficient as a person’ (Rosenberg, 1979, pp. 58). The reader might have noticed that the author mentions self-perception and self-esteem as if they were identical concepts. Research in this area has drawn conclusions about level of self-esteem based on scales measuring self-perceptions in various domains (Hoza, 2002). However in order to measure and determine the level of self-esteem it is vital to examine how important a given domain is to the individual. Thus if a person views him or herself to be poor at athletics this will affect the individual’s level of self-esteem, if and only if the individual regards this as an important domain. An individual, who has a poor self-perception of his /her athletic ability, will experience low self-esteem, if he/she attaches great importance to this domain. However it should be noted that the person might feel competent in other domains, which he/she attaches great importance to and thus might not have overall low global self-worth. A person, who does not attach great importance to this domain, will however not experience low self-esteem (Harter, 2003). Thus it is important not to deduct the level of self-esteem based on knowledge of an individual’s self-perceptions across different domains unless the importance of that domain is scored as well (Harter, 2003). That is unfortunately a mistake, which has been made within research in this area. To illustrate Hoza (2002, pp. 268) argues that: ‘it is generally assumed that children
with ADHD have lower self-concepts than do their age mates, largely due to their difficulties in the academic, social and behavioural domains. Both parents and teachers of ADHD children voice concern about the children’s self-esteem and clinicians often list improved self-esteem as treatment goals’. The author does not refute that children with ADHD might have poor self-perceptions in the academic, social and behavioural domain, due to their impairing symptoms: However it is the importance which these children attach to these domains, which determines the self-esteem levels and not the self-perception scores per se (Harter, 2003). So how does self-perception develop across the life span?

**Development and content of self-perceptions across the life span**

Self-perception is developed in early infancy and is influenced by reactions children receive from their social environment. Self-perceptions are largely influenced by significant people in children’s lives such as their family and in later life by their peers and their teachers (Dumas, 1999). Furthermore self-perceptions are a result of children’s self-appreciation based on their values, beliefs and ideals, which have been imprinted by their social environments (Dumas, 1999). Self-perception in important domains determines the path children choose in their lives. Thus when children believe they can achieve something they do so in most cases (Dumas, 1999). Harter (1985) has described how self-perception develops across the life-span and it should be noted that the following developmental outline is not to be considered as a deterministic stepwise development, where a child progressively develops at the exact age level. This rough presentation of the development of self-perception is for clarity to the reader only.

In very early childhood (3-4 year-olds) young children’s self-representations reflect concrete descriptions of behaviours, abilities, emotions, possessions, and preferences that are potentially observable by others (Harter, 2003). Self-representations are likely to be unrealistically positive, since young children lack the requisite skills (eg. social comparison) to allow them to distinguish between ideal and real self-concepts. They demonstrate all-or-none thinking in which their descriptions are all positive (unless very negative life experiences lead them to construct attributes that are viewed as all unfavourable). Cognitive limitations also extend to the inability to create a concept of global self-worth or self-esteem, although manifestations of positive or negative self-esteem can be reliably observed in their behaviours by others (Harter, 2003). Young children exert positive self-esteem through displays of confidence, curiosity, initiative and independence (Harter, 2003). In early to middle childhood (5-7 year-olds) some of the features of the previous stage persist, in that self-representations are typically very positive, and the child continues to overestimate his/her abilities. Moreover the child at this period still lacks the ability to develop an overall concept of his/her worth as a person (Harter, 2003). With regard to advances, children do begin to display an imperfect ability to inter-coordinate self-concepts that were previously compartmentalized: they can construct a representational set that combines a number of their competencies (good at running, jumping, singing and school work). However, the all-or-none thinking persists and the failure to use social comparison information for the purpose of self-evaluation, however, contributes to the persistence of unrealistic positive self-perceptions (Harter, 2003). In middle to late childhood (8-11 year-olds) there are major cognitive advances that impact the nature of self-representations. The child describes the self in terms of trait labels (eg. smart) that represent higher-order generalizations, based on the integrative framework of more specific behavioural features. The cognitive ability to form higher-order concepts also allows the older child
to construct a more global evaluation of the self as a person. Furthermore the child can acknowledge that he/she can simultaneously possess both positive and negative attributes. A more balanced view of self, in which both positive and negative self-representations are integrated, is also fostered by social comparisons, which not only requires the ability to relate two constructs to each other (perceptions of self and perceptions of others) but is increasingly made important by the socializing environment: Evidence reveals that as children move up the academic ladder, teachers make increasing use of social comparison information. Moreover parents might make comparative assessments of how the child is performing relative to siblings, friends or classmates (Harter, 2003). Last but not least cognitive acquisitions that facilitate perspective taking allow the child to appreciate the opinions of others and these opinions become internalised in the child’s perception of the self (Harter, 2003). In early adolescence (12-14 year-olds) interpersonal attributes and social skills that influence one’s interactions with others or one’s social appeal become very important. Cognitive-developmental advances promoting greater differentiation conspire with socialization pressures to develop different selves in different relational contexts (Harter, 2003). The differentiation of role-related selves can also be observed in the tendency to report differing levels of self-worth across various contexts. The particular level of self-worth within a given context is highly related to the perceived validation that the adolescent experiences from those significant others. Although the young adolescent may have multiple hypotheses about the self, he/she does not yet possess the ability to correctly deduce which are true, leading to distortions in self-perceptions (Harter, 2003). In middle adolescence (14-16 year-olds) the young adolescent is preoccupied with what significant others think of the self, a task that is made more challenging given the development of roles that demand the creation of multiple selves. The adolescent is capable of making finer discriminations, for example self with a close friend versus self with a group of friends. With regard to the impact of the socializing environment, ‘adolescents gaze intently into the social mirror for information about what standards and attributes to internalise’ (Harter, 2003, pp. 77). Differential support, in the form of approval or validation, will lead to different levels of self-worth across relational contexts. In late adolescence (16-18 year-olds) the focus on future selves gives the older adolescent a sense of direction. Attributes reflecting personal beliefs, values, and standards become more internalised and the older adolescent appears to have more opportunities to meet these standards, thereby leading to enhanced self-worth. Social comparison diminishes as comparisons with one’s own ideals increase (Harter, 2003). The older adolescent can also resolve potentially contradictory attributes by asserting that he/she is flexible and/or adaptive (Harter, 2003). Moreover, older adolescents are more likely to normalize potential contradictions, asserting that it is desirable to be different across relational contexts. The older adolescent holds a more stable and balanced view of both positive and negative attributes and a greater sense of accuracy of self-perceptions is developed (Harter, 2003). The domains of self-concept also develop across the life span according to Harter (1985). Harter (1985, 2003) has tapped the domains of the self-concept at each period of the life span. In early childhood the domains are: cognitive competence, physical appearance, physical competence, peer acceptance and behavioural conduct. In middle to late childhood the domains are similar to the preceding stage, except for the inclusion of global self-worth. In adolescence the domains of job competence, close friendships, morality and romantic relationships have been added. Thus the domains of self-perception develop and advance with increasing age (Harter, 2003).

It is evident that self-perception develops in concordance with cognitive development. Self-perception is greatly influenced by cultural and social norms and by significant others. If a society values academic performance greatly, a child is likely to attach great importance to this domain as well. The process by which this occurs is through the internalisation of parental and teacher
attitudes, which is influenced by a society’s standards (Harter, 2003). Phillips & Bernstein (1989) point out that self-perception is affected positively when a child is praised, welcomed, accepted and loved. The opposite is also true: self-perception is influenced negatively, when a child is criticized, rejected, unloved and ignored. Hence, happiness depends on self-perception (Dumas, 1999). Again it should be noted that children’s standards and values differ: Some value academic skills highly, others value sports and having good friends (Bee, 1997). Thus a person might be experiencing happiness despite poor self-perception in the academic domain, if he/she does not attach great importance to this specific domain (Harter, 1999). So how can self-perception impact on different aspects of an individual’s life?

**Influence of self-perception on depression and other correlates**

As already mentioned low self-esteem has been associated with suicide, delinquency, substance abuse and poorer academic outcomes (Hechtman, 1999). Consequently, the successful development of a positive sense of self-worth may help enhance healthy outcomes or protect youth from engaging in problem behaviours (Cheng, 2003, Zimmerman, 1997). The author wishes to evaluate the association between self-esteem and depression, since the main argument in the literature is that children with ADHD will develop low self-esteem due to de-moralization and the outcome of this process is depression (Barber, 2005). Furthermore low self-esteem has been associated with the expression of suicidiality during depressive episodes (Daskalopolou, 2002, Tarlow, 1996, Wild, 2004). The author does not question the fact that depression is comorbid with ADHD, but the causal model put forward thus far is however questionable (Brown, 2000, Kuehner, 2005). The explanatory and causal model, which dominates the area of ADHD and depression, is as follows: ‘The cumulative effect of years of negativity and social rejection can lead to low self-esteem and negative self-perception. For school-aged children, social isolation and rejection are devastating because children at this age are undergoing rapid changes in the development of their own value and self-worth. Deficits in social skills can lead to feelings of negativity and result in aggressive and self-centred behaviour that, in later life, may result in depression’ (Barber, 2005, pp. 236). Thus the years of demoralization that many ADHD children experience in the face of social and school failure is viewed as a precursor of depression (Biederman, 1998). Certain attributions about ADHD-related outcomes may contribute to feelings of depression and low self-esteem (Bothwell, 1997, Treuting, 2001). However there are alternative explanations, which are empirically sound. Let us firstly have a look at the cognitive behavioural theory of depression.

**CBT theory of depression**

Beck’s cognitive theory of depression states that depressive cognitions reflecting negative views of the self, world and future (the cognitive triad) are responsible for the onset, maintenance, and exacerbation of affective (sad mood), motivational (work inhibition), somatic (appetite and sleep), and behavioural symptoms of depression. According to Beck (1967): ‘negative cognitive interpretations of experience lead to these negative views of self, world and future. The thoughts become automatic and affect feelings and behaviour leading to depression. Depressed persons view
themselves as unworthy, incapable and unlovable. This negative view of the self overlaps with low self-esteem: that is a person, who has low self-esteem will have negative self-evaluations’ (Zauszniewski, 1999, pp. 287). It posits that internal global and stable attributions for negative events lead to self-blame and low self-esteem, which in turn lead to increased risk for depression when there is exposure to negative life events (Asarnow, 1988). In the context of depression, negative self-referent statements (I am useless) can have three different functions: A) They can be primarily a product of depressed mood and die away as mood shifts, which is contrary to the CBT model, which considers low self-esteem as an etiological precursor of depression (Fenell, 2004). B) Secondly, they can be a response to depression itself (depression about depression). C) Thirdly negative statements about the self evident while depressed reflect broader cognitive structures or enduring beliefs (negative core beliefs or schemas) that outlast episodes, are relatively independent of depressed mood and contribute to persistent vulnerability to depression, in accordance with the CBT theory of depression (Fennell, 2004, Roberts, 1994). So which theory is valid? Do children with ADHD develop low self-esteem due to demoralization and subsequent depression?

The role of level of self-esteem in depression

Meta-analytical studies have revealed that low self-esteem is a function of depression and not an etiological precursor of depression (Raedt, 2005). This means that individuals do not necessarily develop depression, because of low self-esteem, but might experience low self-esteem, because of the impairing depressive symptoms (Raedt, 2005). Raedt (2005) carried out a rather intriguing study on the implicit self-esteem (automatic evaluation of the self) of depressed patients and found that depressed patients had a positively biased implicit self-esteem, despite being currently depressed. Raedt (2005, pp. 16) argues that: ‘automatic self-evaluations based on early self-evaluations are generally positive. Repeated activation might render these early positive self-evaluations an integral part of the automatic self’. Other researchers however argue that it is not the level of self-esteem, which contributes to the development of depression, but the stability of self-esteem, which matters (Roberts, 1995). It is argued that low self-esteem is an important risk factor only for those individuals who experience stable low self-regard (Roberts, 1995). It is evident that a significant amount of research needs to be carried out in order to fully establish the role of self-esteem in depression. The author does however argue that the role of self-esteem in depression is vague and thus caution should be made, when drawing conclusions regarding self-esteem and depression. So why do children with ADHD develop depression?

As already mentioned researchers argue that children with ADHD develop depression, because of demoralization, due to social and academic failures and subsequent low self-esteem. As the reader has already seen the role of self-esteem is questionable and Biederman (1998) found that ADHD and Major Depression had independent and distinct courses, indicating that ADHD associated depression reflects a depressive disorder and not merely demoralization. Thus the conclusion that ADHD children suffer from depression, due to demoralization is inadequate at this point. So which other possible explanations are available?

Alternative theories of ADHD and depression
One possibility is that children with ADHD and depression are indeed a special subgroup of children, which indicates a potential subtype of ADHD with a possible genetic familial link (Brown, 2000). Another possibility is that other psycho-social risk factors such as lack of social support and stressful life experiences are responsible for the high rate of comorbid depression evident in this group of children (Biscschop, 2004, Brown, 2000, Kuehner, 2005, Vilhjalmisson, 1993). The author argues that the impairing symptoms of ADHD might affect the interpersonal relations of these children and result in a lack of social support. A third possibility could be that the stress of living with ADHD, might result in neurobiological and neurochemical changes in hormone activity, which is responsible for the development of depression (Mcewen, 2002, Mitchell, 1998, Sajdyk, 2004, Sala, 2004, Scarpa, 2002). A fourth possibility could be that the one of the long-term side-effects of the medication (yet unknown) could be the development of depression. As the reader might recall Ritalin is part of the amphetamine class drugs and when amphetamine has been continuously used for an extended the depression that may result may be quite severe (McKim, 2000). And the administration of Ritalin to children with ADHD usually extends over a period of several years (McKim, 2000). The author does not wish to critically evaluate these alternative explanations: The author solely wants to emphasise that depression is a complex and multifaceted disorder, which is not fully conceptualised and depression is to be viewed as a complex interaction between biological and psychosocial factors. It should however be clear that the demoralisation model of depression is inadequate and thus children with ADHD and their families should not be provided with such misinformation or invalid information. Imagine a child with ADHD and his/her family, who is interested in the prognosis, who is informed that the child will probably experience low self-esteem and subsequent depression, due to social and academic failures? Lay persons do put great trust in the area of scientific research and thus it is the responsibility of the scientific society to provide valid information to children and their families. We have seen that children with ADHD might develop depression, even though the exact mode of action is unknown. But what does research tell us about the self-perceptions of children with ADHD? Do they really have low self-esteem as the literature postulates?

Self-perceptions and ADHD: What does research tell us?

Research on the self-perceptions and self-esteem levels of children with ADHD has yielded conflicting results. To the authors knowledge there has only been seven studies carried out within this area and none has been carried out in Denmark. Again the author is amazed that conclusions are inferred from seven studies, six of which have been carried out in The United States and one which has been carried out in Israel. However, we turn to the methodology, results and conclusions of each study.

Hoza (1993) compared the self perceptions of 25 non-referred boys and 27 boys diagnosed with ADHD ranging from 8.5 to 13 years of age. The ADHD boys were participants in the 1990 Children’s Summer Day Treatment Program at Western Psychiatric Institute in Pennsylvania. 13 of the ADHD children had comorbid conduct disorder and 12 of the children with ADHD had comorbid oppositional defiant disorder. The children completed the Self-perception Profile for Children, which measures self-perception, which measures children's self-perception in six domains namely scholastic competence, athletic competence, behavioural conduct, physical appearance, social acceptance and global self-worth. (Harter, 1985). Hoza (1993) did not make use of the
Importance Rating Scale and thus no conclusions regarding self-esteem could be made. The overall conclusion drawn from this study was that ADHD boys did not rate themselves significantly worse than controls on global self-worth and in other self-perception domains (Hoza, 1993). Slomkowski (1995) carried out a prospective study on 65 children diagnosed as hyperactive (DSM-III) without comorbid disorders and 62 matched controls sampled from a medical clinic without hyperactivity. The children were diagnosed with hyperactivity at the ages of 6-12 years and the mean age at adolescent follow-up was 18 years and the mean age at adult follow-up was 26. Self-esteem was measured using an 11-item questionnaire listing domains of self-esteem (including physical appearance, health, intelligence, creative ability, athletic ability, and social ability). Subjects rate their opinion of themselves, as compared to others using a 5 point scale. Overall it was found that individuals who had been diagnosed as hyperactive in childhood reported lower self-esteem in adolescence than matched controls. Furthermore hyperactive children who no longer had a diagnosable mental disorder in adolescence also reported significantly lower self-esteem as compared to controls with no mental disorders (Slomkowski, 1995). Dumas (1999) carried out a study in which 57 hyperactive (DSM-III) children from an outpatient clinic were compared to 59 control children on the SPPC (Harter, 1985). The children were between 6 to 11 years of age and there were no comorbid disorders present in the hyperactive group. Overall it was found that with the exception of athletic competence, all averages of the dimensions of self-perception were lower among hyperactive children than in the control group. Bussing (2000) carried out a study on 143 children with ADHD aged 8-18 years of age from a special education school. Self-esteem levels were measure using the Piers-Harris Self-Concept Scale, which measures the child’s self-concepts in areas of behaviour, intellectual and school status, physical appearance, anxiety, happiness and popularity. Overall it was concluded that self-esteem scores were within the normal range. Hoza et al (2004) investigated the self-perception of 487 children (aged 6-11) diagnosed with ADHD and comorbid disorders such as conduct disorder, depression, anxiety (DSM-IV) and 287 local normative comparison groups. The children were participants in the ongoing MTA study (MTA Cooperative Group, 1999) and the measures were administered 10 months after treatment termination for the MTA treated ADHD participants. The SPPC (Harter, 1985) was applied and it was found that children with ADHD had higher self-perception scores in all domains than did the control group. Barber (2005) investigated the self-perception of 38 children diagnosed with ADHD (DSM-IV) with 39 control participants between 8-12 years of age. Comorbidity was not accounted for in this study. The SPPC scores revealed that the children diagnosed with ADHD score significantly lower on the behavioural subscale than do children without ADHD. Furthermore there were negative trends in four out of the five areas, suggesting that children with ADHD suffer from a lower over-all self-perception than children without ADHD. The final study to consider was carried out by Brook (2005), who interviewed 66 parents of adolescents, diagnosed as having ADHD. 70% of the children had comorbid oppositional defiant disorder, 67% comorbid obsessive-compulsive disorder and 70% comorbid depression. Overall it was found that the main characteristics of these adolescents were low self-image.

So what is one to make of these conflicting results? It seems that no valid conclusions can be drawn on the basis of these few studies within this area of research. It is however valuable to proceed with research in this area in order to establish the self-perception of children with ADHD. And before this study aims at doing so let us consider why these discrepant results are a reality within this field of research.
Empirical discrepancy explained

Firstly it is evident that the above mentioned studies actually examine two quite distinct concepts: self-perception or self-esteem. This does not stop researchers from inferring knowledge about self-esteem based on self-perception scores. Barber (2004, pp. 242) argues that: ‘the current study supports the findings of the American Academy of Pediatrics on the clinical presentation of ADHD, which is often associated with low self-esteem’ despite the fact that it was self-perception scores, which were measured and not self-esteem scores. Barber (2004) did not make use of the Importance Rating Scale developed by Harter (1985), which is necessary to apply in order to obtain self-esteem scores. Furthermore Bussing (2000, pp. 1267) concludes that ‘findings from this study suggest that young special education students with ADHD did not experience, on average, significant self-esteem problems’, even though it was self-perception scores, which were measured. This confusion of concepts does indeed not provide valid information to research bodies, clinicians and worst of all to those suffering from ADHD and their families. So despite the reality of these unfortunate invalid conclusions how can the discrepant results best be explained?

The discrepancy between the findings can be due to a) differing measurement tools and their validity, b) accountability of comorbidity, c) accountability of pharmacological and psychosocial treatment, d) sample size and e) application of diagnostic tool. Furthermore the age of the participants differs across studies and the design differs across studies (longitudinal, prospective, cross-sectional). Furthermore socio-demographics such as SES and school settings are not accounted for in most studies. These reasons might indeed explain the discrepancy between studies and should prompt methodological improvements in this significant area of research in the future.

Aim of the present study

So it seems that there are still improvements to be made in various domains within research on ADHD in order for more valid conclusions to be drawn. This is not to say that research in this area despite its problems, is worthless. On the contrary any research effort contributes to an understanding of ADHD and appropriate treatments of this impairing disorder. The aim of this study is

1. To examine whether children and adolescents with ADHD are different than controls with respect to self-perceptions
2. To investigate if age of diagnosis and years of school in a special education school correlates with self-perception domains.
3. To investigate whether characteristics (and if so, which characteristics?) of a public school and of a special education school influences the well-being of children and adolescents with ADHD. In other words ‘What makes a happy school life for a child with ADHD?’ will be the focus of investigation.
Since these points have not been a focus of research in Denmark prior to this pilot study, the researcher/author does not hold any preconceived hypotheses.

**STUDY 1**

**Methods**

Study 1 investigates the self-perception of children and adolescents with ADHD (experimental group) and children and adolescents without the diagnosis (control group).

**Design and sample**

The design employed in study 1 was a matched pairs design, which means that participants in one group/condition is paired on specific variables with participants in another group/condition. The experimental group consists of 19 children and adolescents (1 female and 18 males) ranging from 8-16 years of age (mean age 13,36). The sample was drawn from Kasperskolen in Copenhagen, Denmark, which is a special education school, restricted to children and adolescents with ADHD. Thus the school environment is tailored in order to accommodate the child/adolescent with ADHD: the teachers have great knowledge of ADHD and the lessons are tailored in accordance with the needs of children and adolescents with ADHD (5 pupils per class, 20 minute modules etc). The experimental group was made up of 4 different classes/groups at Kasperskolen, which are not age-dependent but symptom severity dependent. The sample was a convenience/opportunity sample (sample selected because they are easily available for testing). Kasperskolen was the only school, which welcomed the researcher.
The control group consists of 20 children and adolescents without the diagnosis\(^7\) (9 females and 11 males) ranging from 12-15 years of age (mean age 14.5). The sample was drawn from Hyldebjerg Skole, which is a public school in Vanloese, Denmark. 10 of the children were drawn from a 6\(^{th}\) grade and 10 of the children were drawn from an 8\(^{th}\) grade. The sample was also a convenience/opportunity sample, because the researcher was assigned to these classes by the school principal on the day of testing and because Hyldebjerg Skole was the only school, which welcomed the researcher as well.

**Procedure**

The procedure in the experimental group differed across the 4 groups, depending on the preference of the teacher and the participants. The teachers were the judges of the most suitable testing situation for the children, due to their extensive knowledge of the children’s and adolescent’s abilities and needs.

In group 1 the participants filled out the questionnaire in collaboration with the four teachers and the researcher. The teachers and the researcher assisted one child each in reading the questions and responding to the questions. In group 2 the researcher read out one question at a time and the participants responded and were occasionally assisted by one of the three teachers. In group 3 the participants were sitting around a table and the researcher read out the questions and the participants responded. In group 4 the participants filled out the questionnaire on their own with the occasional assistance of the researcher. The reason for the different testing procedures was as already mentioned due to the researcher’s decision to adhere to the teachers’ recommendations regarding the most suitable testing condition for each group.

Across the groups in the experimental group the researcher introduced herself as a student of psychology, who is interested in knowing how the children and adolescents perceive themselves. The participants were informed that their data would be treated with confidentiality and anonymity and that they were allowed not to participate, if they did not wish to do so. The participants were instructed on how to fill out the questionnaire and told that there were no right or wrong answers. Furthermore the researcher obtained supplementary data on the participant’s attitude towards the questionnaire items and the participants all found that the questionnaire was laborious and boring. Supplementary data which is of great importance was the data obtained in group 3, where the researcher investigated the importance, which these children attach to the social, physical, behavioural, athletic and scholastic domain. This data is of great importance due to its influence on the validation properties of the questionnaire and thus will be outlined in the discussion. Furthermore the participants were instructed to inform the researcher, which group of children these children compared themselves with. This is in accordance with the instructions of Harter (1985, pp.21): ‘our research has documented the fact that children’s scores are directly influenced by the particular social reference groups they are employing. It is urged therefore that one obtain information on the particular social comparison group employed, especially if one is dealing with special populations’. These results are also of great importance for the findings and will also be discussed subsequently.

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\(^7\) The researcher can however not be confident that these children and adolescents do not have a diagnosis, due to the law of confidentiality and protection of human rights, which legislates that no information is to be given to external bodies outside of any given school (Loven om Beskyttelse af Menneskerettigheder)
The procedure of the control group was identical for the participants in the 6th grade and for the participants in the 8th grade. The teacher of both classes selected the participants, which were to participate in the study and the researcher took them to a quiet room. The researcher introduced herself as a student of psychology, who was interested in knowing how the adolescents perceive themselves. Furthermore they were informed that their participation might help alleviate the problems experienced by children with ADHD. The participants were instructed on how to fill out the questionnaire and told that there were no right or wrong answers to the questions. The participants filled out the questionnaire on their own with the occasional assistance of the researcher. Last but not least they were informed about their data confidentiality and anonymity and that they were not obliged to participate despite their teacher’s decision for them to take part in the study. Additional data was obtained on the properties of the questionnaire and the results were similar to that of the experimental group: they found the questionnaire items to be laborious and boring.

**Ethics**

The parent’s of the children and adolescents in the experimental group were prior to the day of testing informed of the possible participation of their children in the study. (Appendix I). They were informed about the purpose of the study and the confidential handling of their children’s data. Furthermore they were informed of the nature of the questionnaire and informed that the questionnaire did not contain offensive items, which could upset their children. They were encouraged to contact the researcher or the principal of the school in case they did not wish for their children to take part in the study. Furthermore they were informed that they would obtain the findings of the study, when these were analysed (See Appendix).

In the actual testing situation the participants were informed that their data would be handled with great confidentiality and anonymity. They were furthermore informed that they were not obliged to participate in the study, if they did not wish to do so.

In the control group the participants were informed that their data would be treated with confidentiality and anonymity. Furthermore they were informed that they could withdraw from the study at any time, if they did not wish to participate. The participants were given a debriefing, which they were encouraged to deliver to their parents. The debriefing informed the parents of their children’s participation in the study and the confidential handling of their children’s data. They were furthermore informed of the properties of the questionnaire and the purpose of the study. Last but not least they were instructed to contact the researcher or the school principal if they wished to exclude their children’s data. Furthermore they were advised to contact the researcher if they wished to obtain the overall findings of the study. (Appendix II).

**Instrument**
The measurement tool used in the study was the Self-perception Profile Scale for Children, which is a 15-minute test measuring self-perception (Harter, 1985). The scale consists of 6 sub-scales each consisting of 6 items measuring 6 different domains namely scholastic competence, social acceptance, athletic competence, physical appearance, behavioural conduct and global self-worth. Each item contains four possible answers and is scored on a 1 to 4 point scale (1=very negative self-perception, 2=negative self-perception, 3=positive self-perception and 4=very positive self-perception) The respondent is instructed to evaluate how he/she views him/herself across the different domains on a four point scale. The rationale of using this specific instrument is firstly that it has been used previously in international research on self-perception of children with ADHD and thus makes cross-cultural comparisons possible. Secondly the Self-perception Profile Scale for Children is capable of providing a rich and accurate picture of an individual’s self-concept, because it examines the differences in an individual’s scores across the various domains (Harter, 1985). Thirdly the Self-perception Profile Scale for Children has adequate psychometric properties and has been found to have high reliability scores (Cronbach’s Alpha .81, Dumas, 1999). High reliability scores reflect the fact that the questionnaire is understood by the child, which is indeed of great importance. The validity of the scale is however not fully established and will probably tend to differ cross-culturally as the reader will experience in the discussion. The researcher translated the original scale to Danish and the translation was subsequently judged by an authorized interpreter (Appendix III). The format of the scale was similar to that of the original self-perception profile scale for children (Harter, 1985) in order to keep its current face validity (Coolican, 1999) and in order to make cross-cultural comparisons possible (Barber, 2005).

Results

The raw data are shown in table 1 (Appendix IV).

The data was non-parametric, but is however treated as parametric. Questionnaire data are often treated as parametric data within psychology due to its greater statistical power. Thus the data were analysed using an independent t-test. The mean and standard deviation are shown in table 2.

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8 It should be noted that the accuracy and validity of the scale will be critically evaluated in the discussion. Thus the reader is encouraged to treat this statement with caution.
Table 2 Mean and standard deviation of differences between groups across the six domains.

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schcom ADHD</td>
<td>19</td>
<td>15,7368</td>
<td>3,72443</td>
<td>.85444</td>
<td></td>
</tr>
<tr>
<td>Socacc ADHD</td>
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<td>17,1000</td>
<td>3,17722</td>
<td>.71045</td>
<td></td>
</tr>
<tr>
<td>NOADHD</td>
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<td>18,0000</td>
<td>4,18994</td>
<td>.96124</td>
<td></td>
</tr>
<tr>
<td>Athcom ADHD</td>
<td>20</td>
<td>18,2000</td>
<td>3,08818</td>
<td>.69054</td>
<td></td>
</tr>
<tr>
<td>NOADHD</td>
<td>19</td>
<td>16,5263</td>
<td>4,58704</td>
<td>1,05234</td>
<td></td>
</tr>
<tr>
<td>Phyapp ADHD</td>
<td>19</td>
<td>19,4211</td>
<td>3,90606</td>
<td>.89611</td>
<td></td>
</tr>
<tr>
<td>NOADHD</td>
<td>20</td>
<td>18,7000</td>
<td>4,50647</td>
<td>1,00812</td>
<td></td>
</tr>
<tr>
<td>Behcon ADHD</td>
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<td>16,6842</td>
<td>3,94479</td>
<td>.90500</td>
<td></td>
</tr>
<tr>
<td>NOADHD</td>
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<td>18,3500</td>
<td>2,25424</td>
<td>.50406</td>
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<tr>
<td>Globsw ADHD</td>
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<td>18,9474</td>
<td>4,19621</td>
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<tr>
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<td>2,85205</td>
<td>.63774</td>
<td></td>
</tr>
</tbody>
</table>

The results of the independent t-test are shown in table 3.

Table 3. Independent t-test of difference between groups across the six domains.

<table>
<thead>
<tr>
<th>Levene's Test for Equality of Variances</th>
<th>t-test for Equality of Means</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equal variances assumed</td>
<td>F  Sig.</td>
</tr>
<tr>
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</tr>
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<td>1.227 .3544</td>
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<td>1.630 .210</td>
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<td>-.608 .31515</td>
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The results of the independent t-test were not significant in any of the six domains. Scholastic competence (t=-1,23, df=37, p=0.226, two-tailed), social acceptance (t=-1,70, df=37, p=0.866, two-tailed), athletic competence (t=-0.70, df=37, p=0.486, two-tailed), physical appearance (t=-0.53, df=37, p=0.598, two-tailed), behavioural conduct (t=-1.63, df=37, p=0.112, two-tailed) and global self-worth (t=-0.61, df=37, p=0.543, two-tailed). Thus there were no differences in scores between the experimental group and the control group. In other words it was found that children and adolescents with ADHD did not score differently across the six domains than children and adolescents without ADHD. Inspection of the mean and standard deviation seem to suggest that children and adolescent without ADHD have higher self-perception scores than children and adolescents with ADHD, even though this difference does not reach statistical significance (see
Scores on the physical appearance scale is an exception though, where children and adolescents with ADHD seem to score higher than the control group.

The data were furthermore analysed using a multiple regression test in order to establish the correlations (if any), between age of diagnosis and years of school at the special education school for the participants with ADHD and the scores across the six domains. The predictor variables were age of diagnosis and years of school at the special education school and the criterion variables were school competence scores, social acceptance scores, athletic competence scores, physical appearance scores, behavioural conduct scores and global self-worth scores. The enter method was used and the significant results of the multiple regression test are shown in table 4 and 5.

Using the enter method a significant model emerged (F2,13, \( p=0.004 \), Adjusted R square= ,751). Significant variables are shown below

<table>
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<tr>
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</tr>
<tr>
<td>Age of diagnosis</td>
<td>,605</td>
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</table>

Table 3. Correlation coefficients between years of school, age of diagnosis and behavioural conduct scores

This indicates that there was a positive correlation between the predictor variables and behavioural conduct scores. This suggests that the more years a child has attended a special education school the higher scores he or she tend to obtain on the behavioural conduct scale. In other words the child has a more positive view of him/herself regarding behavioural conduct the longer he/she has attended a special education school.

Using the enter method another significant model emerged (F=2,13, \( p=0.076 \), Adjusted R square= ,223). Significant variables are shown below

<table>
<thead>
<tr>
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</thead>
</table>
Years of school, $r = 0.571$

Table 4. Correlation coefficients between years of school and self-worth scores.

This indicates that there is a positive correlation between years of school and global self-worth scores. Thus the longer a child has attended a special education school the more likely he or she is to obtain higher scores on the global self-worth subscale.

The internal consistency of the self-perception scale was calculated using Cronbach’s Alpha in order to establish the reliability of the scale (Table 6).
Table 6. Reliability scores of the six scales.

<table>
<thead>
<tr>
<th>Gruppe</th>
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<th>N of Items</th>
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</thead>
<tbody>
<tr>
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<td>2 noadhd</td>
<td>.823</td>
<td>6</td>
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<table>
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<th>N of Items</th>
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</thead>
<tbody>
<tr>
<td>1 adhd</td>
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</tr>
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<td>2 noadhd</td>
<td>.625</td>
<td>6</td>
</tr>
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</table>

<table>
<thead>
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</tr>
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<td>.598</td>
<td>6</td>
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</table>

<table>
<thead>
<tr>
<th>Gruppe</th>
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</tr>
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<td>.938</td>
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<table>
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<tbody>
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<tr>
<td>2 noadhd</td>
<td>.527</td>
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</table>

<table>
<thead>
<tr>
<th>Gruppe</th>
<th>Cronbach's Alpha</th>
<th>N of Items</th>
</tr>
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<tbody>
<tr>
<td>1 adhd</td>
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</tr>
<tr>
<td>2 noadhd</td>
<td>.740</td>
<td>6</td>
</tr>
</tbody>
</table>

The establishment of the reliability of any scale is of great importance, especially when it is administered in a country, in which the scale has not been developed originally. (Dumas, 1999). Furthermore it is of great importance, when it is administered to a special population group in which reliability scores have not yet been obtained (Harter, 1985). The reliability scores obtained from the experimental group across the six domains are as follows: school competence (Cronbach’s Alpha = .655), social acceptance (Cronbach’s Alpha=.707), athletic competence (Cronbach’s Alpha=.792), physical appearance (Cronbach’s Alpha=.711), behavioural conduct (Cronbach’s Alpha=.711).
Alpha=.741) and global self-worth (Cronbach’s Alpha=.797). The reliability scores obtained from the control group across the six domains are as follows: school competence (Cronbach’s Alpha=.823), social acceptance (Cronbach’s Alpha=.625), athletic competence (Cronbach’s Alpha=.598), physical appearance (Cronbach’s Alpha=.938), behavioural conduct (Cronbach’s Alpha=.527) and global self-worth (Cronbach’s Alpha=.740). These reliability scores suggest that the scale is reliable and thus appropriate to administer to children and adolescents with ADHD and children and adolescents without the diagnosis. In other words the reliability scores suggest that the scale is reliable to administer to a special population group (ADHD) and to a normal population group, because both groups seem to understand the content of the questions and answer appropriately and reliably to the items in each sub-scale. It does reliably measure a construct, but whether this construct is self-perception is disputable, which will be discussed shortly.

**A sum up of the findings**

The investigation of the self-perception of children and adolescents with ADHD compared to that of the control group did according to the independent t-test not show significant differences across the 6 sub-scales. However it is an intriguing finding that an inspection of the descriptive statistics such as the mean and standard deviation show that children and adolescents without ADHD tend to score higher on the scholastic competence, the social acceptance, the athletic competence, the behavioural conduct and the global self-worth scale, whereas the participants in the experimental group (ADHD) scored higher on the physical appearance scale. Another interesting aspect, which might explain the findings to a certain extent, is the fact that the multiple regression test suggests that the number of years a child has attended a special education school correlates positively with self-perception scores on the behavioural conduct scale and the global self-worth scale. Thus characteristics of the school (yet unidentified) might prosper certain aspects of self-perception of this group of children. The authenticity of these findings is supported by the reliability scores obtained across the six sub-scales, which far exceeded the statistical threshold. The reliability analysis suggests that the test is reliable and can be administered to Danish special sub-populations (ADHD) and to the normal population.

**STUDY 2**

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*High reliability is a necessity for the validity of a scale, but does however NOT ensure the validity of a scale. In other words it is evident that the scale reliably measures a construct, but is this construct self-perception?*
The aim of study II was to investigate how children with ADHD experience the school settings at a public school and at a special education school. In other words the study wishes to illuminate how characteristics of these schools contribute positively and/or negatively to the academic, social and personal spheres of these children and adolescents and which these characteristics influence those areas. The author argues that this investigation is essential and that the results can have great practical implications such as Government Law changes: If the public school is not as ‘containable’ as Government Law Officials argue, then it is the responsibility of the Danish Government to sufficiently accommodate for this group of children. If it is concluded that children with ADHD benefit from special education schools, then it would be in the best interest of this group of children to attend such a school. It will benefit the child with ADHD and his/her family and reduce potential social costs, even though it will be a great social expense at first to increase the number of special education schools in Denmark. Moreover it is essential to do research in this area because the school experience is such a great part of a child’s life and can, as we have experienced, act as a potential risk-factor (if negative) and/or protective factor (if positive) for the child’s further development and prognosis (Hechtman, 1999). Last but not least the author argues that research in this area and its subsequent conclusions should influence the Laws concerning the entitlement of this group of children, so that their destiny and future is not in the hands of a social worker, who might not have the appropriate skills to make such a vital decision. It is important that the decisions regarding these children’s welfare is based on a sound empirical evidence base and not on the public and political attitude of a society.

The author does not hold any preconceived hypotheses regarding ‘which school is the most appropriate for children with ADHD?’ The author does however expect to find individual differences within the ADHD group, which determines the appropriateness of a certain school for a specific individual. Moreover the author expects to find characteristics within the two types of schools, which influence the child’s experience at school. In other words it is NOT an investigation of one type of school versus the other, since both schools are not entirely static entities, but contains relative entities as well, which influence the child’s experience. What is meant by this statement is that stable characteristics are the number of pupils per class and the duration of a module, which does indeed differ between the two types of school. Relative entities on the other hand are the attitude and teaching skills of the teacher, which are indeed interchangeable across the two types of school. Thus it is an investigation of which characteristics of both types of schools might contribute positively and/or negatively to a child’s experience. Moreover it is an investigation of which characteristics of the child correlate positively and/or negatively with certain characteristics of the school. The author does believe that there are individual differences, which determines the appropriateness of a specific type of school for a particular individual, due to the heterogeneous nature of the disorder. Thus the author wishes to investigate which child might benefit from which type of school under which circumstances in order to reduce potential poor prognostic outcomes and social costs. It should be noted that this is a pilot study and thus firm conclusions regarding this vital matter cannot be drawn on the basis of this small study (4 interviews). The author does however wish to encourage future research in this area in order to reduce the poor prognostic outcomes of this group of children and its potential social costs.
Methods

Participants

The sample of study 2 was an opportunity/convenience sample, because it was the participants, who responded to the advertisement in the monthly ADHD magazine (Appendix V), who were interviewed. The inclusion criteria of the study were that the child had attended a normal public school and was currently attending a special education school at the time of the interview. The rationale of this inclusion criterion was to make a comparison between the two types of school possible. However when the researcher was given the opportunity to interview a boy with ADHD, who was currently successfully attending a normal public school, the author accepted, since this could illuminate, which school characteristics and individual characteristics contributed to the positive school experience of the boy. There were four interviews and three groups of interviewees and each will be described.

The first interview was conducted in Rødovre in Copenhagen on the 28th of February. The interviewees were a 15 year-old boy with ADHD attending a special education school on his fifth year and his mother. The boy was receiving medication (Ritalin). The second and third interviews were carried out in Jyllinge outside of Copenhagen on the 14th of March. The first interviewee was a 14 year-old boy with ADHD, Tourette Syndrome and Obsessive Compulsive Disorder attending a special education school on his fourth year. The special education school was however not ADHD restricted. The boy did not respond to medication, but receives weekly therapy from a psychologist. The second interviewee was a younger brother 10 years of age with pure ADHD attending a normal public school, who responds well to medication. The boys were interviewed separately with their mother and father present during both interviews. The fourth and final interview was carried out in Kokkedal outside of Copenhagen on the 20th of March. The interviewees were a 10 year-old boy with ADHD and anxiety and his mother. The boy is attending a special education school restricted to children with ADHD on his second year and responds well to medication.

Procedure

The setting of the interviews was the interviewees’ home and the procedure was similar across interview I, II, III and IV. The researcher introduced herself and had a private conversation with the children’s parents describing the content of the interview schedule, prior to the interview. The procedure in interview IV differed from the other interviews, in that the researcher was encouraged by the mother to spend some time with the boy, prior to the interview, due to the child’s comorbid anxiety. The researcher then introduced herself to the child and asked the child that she would like to know something about the child’s life at school. Each interview took approximately 20 minutes, in which the parent/s and the child were interviewed simultaneously (Appendix VI, VII, VIII, IX). By completion of the interview the interviewees were provided with a debriefing and were thanked for their participation. They were furthermore told that they would receive a resume of the findings as soon as these were available (Appendix X).
Ethics

The parents were informed of the content of the interviewing schedule prior to the interview, and were asked to judge whether the content might be offensive or hurtful to the child. They were furthermore informed about the anonymous and confidential handling of their data and were told that they could withdraw from the study at any time. Last but not least they were informed that they could exclude their data from the study, if they wished to do so. The children were prior to the interview informed that they could withdraw from the study at any time and that they should inform the researcher, if there were any questions they did not wish to respond to. The parents were given the contact details of the researcher and her supervisor Pernille Hvii d, in case they were in need of further assistance.

Instrument

The instruments applied was a semi-structured interview schedule (See Appendix) and an audio recorder (Sony, cassette-corder, tcm-465v). The interview schedule consisted of questions regarding the child’s experience of the two types of schools and how it has affected the child in social, personal and academic domains. Furthermore the interview schedule consisted of questions regarding the parents’ perception of the child’s experience at the schools and the parents’ perception of the schools. The interview schedule was developed partly on the grounds of self-esteem research and partly on basic school psychology research (Harter, 1985, Hechtman, 1999). However a majority of the questions are not theory driven, in the purely positivistic sense, since research has not been carried out in this specific area prior to this pilot study. Or in other words the questions are not developed on a priori hypotheses and thus the questions do not act as hypothetico-testing devices. The application of a semi-structured interview schedule is to be considered as a guideline for the researcher, which is not purely theory driven. The emergence of themes and categories throughout the interviews were the aim of study II in order to generate new theories regarding this area of research.

Results

Analysing qualitative data using Grounded Theory

Grounded theory is applied in the analysis of the qualitative data, due to its ability to generate new theories, which is most valid at this stage, since it has not been previously investigated. As
Silverman (2005, pp. 71) argues grounded theory ‘Is clearer about the generation of theories than about their tests’. Furthermore Silverman (2005, pp. 71) argues that: ‘At best, grounded theory offers an approximation of the creative activity of theory building’. The author views that application of grounded theory in this study as appropriate, since it is the aim of this study to generate new theories concerning this area, which can then (hopefully) be tested further in the quantitative realm of psychology. It should be noted that the interviews are analysed separately, but are presented in this paper simultaneously. In other words the emerging categories presented in the subsequent paragraphs have emerged from an analysis based on all four interviews, which are presented in appendix. Let us turn to the stepwise process of analysing the qualitative data.

**Line-by-line coding**

The first step in the process of analysing the qualitative data is line-by-line coding. An example of line-by-line coding is illustrated by extract 1

B: Jeg var jo anderledes end de andre. The boy is explaining how he was treated at the public school. He felt alienated and treated him with respect. behandlede mig heller ikke ordentligt (Interview II, line 10-13)

Another example of line-by-line coding is illustrated by extract 2

M: Altså det gælder om at finde de rigtige explaining how her son has a difficult time playing with other children if they change the rules of the game a lot. He often observes other children play instead of playing with them. He needs role models.

All the interviews were analysed using line-by-line coding in order for subordinate categories to emerge. Let us have a look at the emerging sub-categories and associated categories.

**The emergence of categories and sub-categories**
The aim of study 2 was to investigate the school experience of children with ADHD and thus it is solely categories, which concern the school experience that are presented in this paper. The author is aware that there are several intriguing categories emerging from the data analysis such as children’s experience of living with ADHD and their parent’s experience of having a child with ADHD and so on. The reader is indeed encouraged to thoroughly examine the interviews in order to obtain a conception of what it means to be living with ADHD for the children and their significant others. It is however solely the categories, which are relevant to the aim of the investigation, which are presented in this paper. It should be noted that the categories emerged from the identification of sub-categories in the spirit of Grounded Theory. They are however presented as follows:

► Children’s experience of special education schools and public schools. Sub-categories underneath this heading are the school context and structure, the relationship with the teachers, the relationship with peers and their attitude towards the two types of schools.

► Parents’ perception of their child’s experience at the special education school and the public school. Sub-categories underneath this heading are the school context and structure, the relationship with the teachers, the relationship with peers and characteristics of the child.

► Parents’ attitude towards the public school and the special education school. Sub-categories are the pros and cons of the schools in the social, personal and academic domain and hope for the future.

Let us now turn to the category: children’s experience of the two types of schools and the proposed sub-categories. It should be noted that the findings from the qualitative data will be discussed superficially in this section, but will indeed be discussed in depth in the discussion.

**Children’s experience of special education schools and public schools**

The first sub-category to consider is the school context and structure of the two types of school. It was found that for most of the interviewees the structure of the special education school had a positive influence on the child. This is illustrated by the following extract.

‘Jeg synes det hyggelige det er lærerne og eleverne og de faste omgivelser (Interview I, line 5)’

Furthermore it was found that some aspects of the structure of the public school were perceived negatively by the child.

‘Krydsuge. Det var da så møgelortet’ (Interview IV, line 47).

B: ‘I forhold til den anden skole er de alle søde og forstående. Der er ikke så mange børn og der er mere ro’. (Interview II, line 76-77)

It seems to be important for some of the children to have a structured school day without much deviation from this structure. However it is possible for one of the children, who attends a public school to concentrate, which is supported by the following extract
I: ‘Hvad med I timerne. Kan du sidde stille og koncentrere dig?

Thus it seems that there are individual differences in how the structure of the schools influences a given child. Some of the children prefer a structured day at school, where there is little deviation from this structure and an environment in which the number of pupils is small and in which peace and quiet dominates. However the boy who is attending the public school does not find these factors problematic, but does however find it difficult to concentrate due to the disturbance of one particular pupil.

The second sub-category is the children’s relationships with the teachers. It seems that for some of the children the relationship with the teacher was poor at the public school, which is supported by the following extracts

I: ‘Hvad med dit forhold til lærerne. Hvordan var det i forhold til, hvordan det er nu?’
T: ‘Øh, der var måske ikke så meget respekt der, fordi jeg var rastløs. Men det er så blevet meget forbedret (Interview I, line 22-25)

B: ‘Og så var der ingen, der respekterede mig. Ligebyldigt hvad jeg gjorde, så blev jeg bare mobbet. Og de voksne behandlede mig heller ikke ordentligt. (Interview II, line 11-13).

The experience of these children is that the teachers did not respect them or their disability at the public school, which they seem to do at the special education school. Moreover some of the children were bullied by their fellow pupils during their time at the public school, which is further supported by the third sub-category.

The third sub-category to consider is the relationship with the peers at the two schools. Some of the children were bullied at the public school but is also bullied at the special education school, which is illustrated by the following extract

B: ‘Men ellers mange af de andre de mobbede mig stort set hver dag’ (Interview II, line 14-15)
F: ‘Jeg bliver hele tiden drillet’ (Interview IV, line 60)

However another boy experiences a more positive relationship with his peers at the special education school, which is illustrated by the following extract

I: ‘Er du bedre venner med dine klassekammerater nu, end du var på den anden skole?
T: ‘Ja, det er jeg helt klart.
I: ‘Tror du, at der er fordi, de forstår dig bedre, fordi de har den samme diagnose?
T: Ja, det tror jeg. Fordi de har det samme problem som mig og det får vi hjælp for’. (Interview I, line 33-39)

The boy who is attending the public school does however have a positive relationship with his peers, due to their apparent support and acceptance.

D: ‘Ja først kommer Inge og siger ‘du skal huske din pille’ og så kommer der to andre ‘du skal huske din pille’.’(InterviewIII, line 105-106)
It seems that the risk of the children being bullied is present at both types of schools, even though it seems to be a more prevalent occurrence at the public school, due to the children being somewhat different from the other children, due to the presence of impairing ADHD symptoms. However positive peer relations also seem to be present at the two types of school, due to perhaps an acceptance from the other children at the public school and due to the children interacting with children with similar symptomatology at the special education school.

**The fourth sub-category** is the well being of the child and their attitude towards the two types of schools. Some of the children who are attending a special education school view the public school negatively due to their negative experiences at the school, which is illuminated by the following extracts

I: ‘Har I så gjort jer nogle overvejelser om, at Benjamin skal tilbage til folkeskolen?’
L: ‘Ja det er meningen, at han skal det’.
I: ‘Hvad siger du til det, Benjamin?’
B: Nej, jeg gider ikke, for jeg synes, at det var lort på den anden og jeg gider ikke tilbage’ (InterviewII, line 158-163)

T: ‘Nej, jeg vil ikke tilbage’ (Interview I, line 105).

However one of the boys preferred the public school, which is illustrated by the following extract

F: ‘Valholm skole. Ja det var jeg så tilfreds med, men jeg blev bare kylet ud. Jeg var lige så tilfreds med det ikke, men så blev jeg bare kylet ud som en stang dynamit’ (Interview IV, line 11-13)

So it seems that the children have had and do have quite different experiences of the special education school and the public school. It does however seem that the quality of the relationship with peers and the teachers are vital for a child’s experience at school and it is evident that the quality and nature of these does indeed differ across the two types of schools. However the majority of the children did not feel respected and accepted at the public school, which has certainly left its mark on the children’s negative view and reluctance towards the public school. Moreover the structure of the school such as the 20 minute duration modules and the small number of pupils per class, which the special education school offers, does seem to be important for a majority of the children, because they are more capable of learning and are more capable of interacting with the other pupils and the teacher due to the set structure. In other words they are confused by a chaotic environment, which might impair their social skills to a great extent. Let us turn to the second category and its associated sub-categories.

**Parent’s perception of their children’s experience of the public and special education school**

The second category is the parents’ perception of their child’s experience at school. The researcher views the parents’ perception of their child’s experience at school as valuable information, which further supports the information provided by the child, which might not be as rich due to their young age and limited cognitive skills.
The **first sub-category** to consider is how the parents perceive the school context at the two schools and how it influences their child. The following extracts illustrate how the great number of pupils per class at a public school can have a detrimental effect on the child’s safety and their learning process and how the public school is not capable of containing this group of children.

K: ‘Nej det har de ikke, for da Thomas gik I folkeskole rejste han sig pludselig op og gik over vejen og købte slik og ting. Så det kan de ikke have i en almindelig folkeskole. Det var en busy road og de kan ikke have ansvar for børnene’ (Interview I, line 82-85)

M: ‘Han kunne ikke håndtere, at der var så mange børn i klassen at forholde sig til. Og han kan slet ikke tage imod en fælles besked’ (Interview IV, line 74-75)

K: ‘Meget godt. Meget bedre, fordi at klassen er meget mindre’ (Interview I, line 46-47)

M: ‘Han kunne ikke følge med i en stor klasse’ (Interview IV, line 167-168)

These extracts suggest that the public school, due to certain structural elements, such as the great number of pupils per class, is not capable of accommodating for this particular group of children, neither with regard to these children’s safety nor with regard to their learning process.

The **second sub-category** is the parents’ perception of the child’s relationships with the teachers and how it affects the school experience and well being of the child. The following extracts illustrate this point.

L: ‘Og det var nok et meget stort problem på folkeskolen, for der var altid et eller andet galt. Så det virker som en gladere dreng nu’ (Interview II, 100-101)

M: ‘De kunne slet ikke forstå det’ (Interview IV, 100-101)


The boy, who attends public school, does however have a positive relationship with his teachers, which is illustrated by the following extract.

L: ‘Ja altså de prøver virkelig at gå ind i det i forhold til hvad de gjorde derovre (broderens folkeskole). Derovre ville de slet ikke gå ind i noget vel’ (Interview III, line 55-56).

It seems that the relationship with the teachers at the public school was poor in the majority of cases at the public school, due to the teachers’ lack of resources due to the great number of pupils per class and their lack of understanding of the child and his/her disorder. The parents describe that a poor relationship with the teachers and a lack of understanding of the children’s disorder, greatly influence the children’s school experience and their overall well-being.

The **third sub-category** is the parents’ perception of their child’s experience with peer relations. It seems that the number of friendships is similar across the two types of schools according to the parents’ perception, which is illustrated by the following.
I: ‘Har Benjamin fået flere kammerater?
L: ‘Nej nu er det jo sådan, at de ikke er her fra kommunen. Og det kniber, når de går på en special skole’ (Interview II, line 105-106)

It seems that the geographical distance between the special education school and the children’s home, which is usually greater than if they were attending a public school, does influence the social sphere of these children. It is difficult for the children to bring home friends from school, due to the great geographical distance. Thus the children have not necessarily made more friends outside of school after attending a special education school, but the quality of the social interactions, whilst at the special education school are according to the parents more positive.

The fourth sub-category to consider is the parents’ perception of which child characteristics, seem to be influential in the child’s experience at school in the scholastic and social domain. The following extracts illustrate this point.

I: ‘Har Benjamin svært ved at skabe venskaber?’
L: ‘Ja’ (Interview II, 110-111)

M: ‘Medicinen har gjort en stor forskel’ (Interview IV, line 161).

I: ‘Hvordan var han før Ritalinen?’
L: ‘Meget ukoncentreret.
A: ‘Kunne ikke sidde stille og forstyrrede undervisningen. Han er et helt andet barn, når han får det’ (Interview III, line 72-75)

M: ‘Men han gør jo ting på en autistisk måde, hvis de andre leger med Pokemon kort, så leger han med dem, til han kender alt deres, hvad de nu kan. Altså han kan ikke se det sociale’ (Interview IV, line 181-182)

So it seems that characteristics of the child such as comorbid disorders (boy with empathy problems and boy with autistic features) and response to medication influences the quality of the child’s experience at school. Thus it seems to be an interaction between child characteristics and school characteristics, which determines the quality of a child’s experience at school. Let us now turn to the third and final category and its associated sub-categories, which emerged from the data.

Parent’s attitudes towards the special education and public schools.

The researcher included this category, because the attitude of the parents towards the different schools does indeed have an impact on the child’s life. A parent who views the public school in a positive light wants their child to attend this school and vice versa. What is quite fascinating is that all of the parents, despite their quite positive view of the special education school, wish that their child returns to a public school. This view is probably influenced by society’s attitude of the concept of ‘normality’, which is not empirically evidence based and is thus not necessarily in the best interest of the child. In other words it seems to be the belief of the parents that children with ADHD will be ‘normalised’ just by integrating them among ‘normal’ children. The author argues
that this causal belief can have detrimental effects on the child, because it is important to acknowledge that the child does indeed have severe impairments in various domains and these do not counterbalance themselves out, just by interacting with ‘normal’ children. Thus the inclusion of this category is considered to be of utmost importance, because it can have detrimental effects on the child’s life.

**The first subcategory** to consider is the parents’ attitude towards the social context of the child at the schools and the following extracts illuminate this point.

I: ‘Med hensyn til det du sagde før om, at Frederik mangler nogen at spejle sig i
M: ‘Jeg kan se, at han prøver det, at se hvordan de andre gør, hvor han ligesom mangler respekt for de andre, fordi der er så kiksede’ (Interview IV, line 181-186)

A: ‘Jamen, det ville være en skole med ikke så mange elever som en folkeskole og de andre skal være normale børn ikke. (Interview II, line 182-183)

L: ‘Selvfølgelig vil han kunne lære ting af dem, det almindelige ungdomsliv, kan man sige ikke. Som kommer til at knibe, der hvor han er nu. Der er ikke nogle piger og sådan nogle ting mangler (Interview II, line 202-205)

It is evident from these extracts that the parent’s are not entirely satisfied with the social context of the special education school and they all wish for their children to return to the public school, so they can learn from ‘normal’ children and have a more ‘normal’ life (whatever that is?). The children however do not wish to return to the public schools, because of their past negative experiences in such schools.

**The second subcategory** is the parents’ attitudes towards the academic environment at special education schools. The attitude towards the academic level is indeed negative, which is illustrated by the following extracts.

B: ‘Der er heller ikke nogle fag deroppe’ (Interview II, line 209)

A: ‘Altså skolen er desværre ikke i stand til at give kvalificeret undervisning. De har ikke kvalificerede lærere’ (Interview II, line 134-137).

M: ‘Min mand bliver ved med at sige: “de må op i gear”’ (Interview IV, line 127)

So it seems that despite the fact that the special education schools do have a positive impact on the well-being of the children, there does seem to be a rather poor academic environment, according to the parents. Whether this attitude reflects the parents’ desire to normalize their children or it reflects an actual fact is difficult to tell. Perhaps the parents want their children to learn as much as ‘normal’ children, but whether this group of children is capable of learning the entire curriculum is difficult to tell and probably depends on several risk-factors such as comorbid learning difficulties, time of diagnosis etc (Hechtman, 1999). This is not to suggest that the author believes that this group of children does not possess the ability to learn the entire curriculum, but it could be that the parents do not properly acknowledge their children’s disorder and its possible impairments in the academic arena. If, however, the children are really capable of learning the entire curriculum then the parents’ opinion regarding the academic environment is indeed well-founded. On the other hand if the academic environment at the special education school is well-suited for the children, then it seems
to be the desire of the parents to ‘normalize’ their children with regard to their academic skills. At present there is no clear cut evidence which supports either reflection, but it could indeed be an intriguing research ordeal.

A sum up of the findings

The findings from the analysis of the qualitative data suggest that there are indeed individual differences, which determine the appropriateness of a given school for a particular child. Child characteristics, teacher characteristics and peer characteristics interact in a complex manner in determining the quality of a child’s experience at school. It seems that a positive attitude of the teacher and the peers and a child responding well to medication, can indeed prosper successful attendance at a public school. On the other hand a positive attitude of the teacher and peers, but the presence of comorbid disorders impairing the social aspects of the child, can make the school experience at a special education school poor as well. It does however seem that the attitude of the teachers are mainly poor at the public school due to lack of resources and the great number of pupils per class. The structure and context of the school such as small classes does seem to benefit the child positively. It therefore seems that stable entities such as the structure of the school, which are only present at the special education schools does indeed seem to have a positive influence on the child. However relative entities such as the relationship with the teachers differ across the two types of schools and are definitely influential in the child’s school experience. The academic environment at the special education school is viewed negatively and is described as insufficient by the parents. The social environment is mainly experienced positively by the children and parents, but the parents do wish for their children to interact with ‘normal’ children and thus wish for the children to return to the public school. The conduction and analysis of the interviews has indeed yielded interesting findings and has emphasised the complexity of conceptualising the factors contributing to a successful school experience for a child with ADHD. Moreover it is of great interest to witness the conflicting perceptions between the child and the parents of what is appropriate for the child.

DISCUSSION

Introducing the discussion

Thus far this paper has introduced the reader to the complex conceptualisation of various areas of ADHD ranging from its present diagnostic discrepancy and complexity to its etiological and prognostic complexity (Biederman, 2004, Hechtman, 1999, Rasmussen, 2002). The reader has experienced that most conceptualisations of ADHD are indeed still at an empirically premature level, though it can be grasped at a theoretical level, which the author has indeed pursued throughout this paper (Bronfenbrenner, 1979, Grant, 2003, Loeber, 1991). Much more research is needed in these vital areas in order for more appropriate preventive strategies and treatments to be available to this group of children and adolescents. It is a well known fact in the literature and furthermore a fact experienced personally by the author through the interaction with the participants that living with ADHD symptomatology can be impairing to the individual in personal, social and academic areas and is indeed challenging to significant others (Teeter, 1995). Furthermore the

10 The author must inform the reader that the author feels unethical applying the term ‘normal children’, when referring to children without ADHD. The term is however used to illustrate the social and personal categories of the participants.
unfortunate developmental outcomes can have great social costs such as delinquent and anti-social behaviour and imprisonment (Barkley, 2000). The author must emphasise that the rationale of this paper is mainly to alleviate the problems experienced by the sufferers and their significant others and not so much a concern about social costs per se. But an alleviation of these problems is also implemented through social and political and thus financial changes. In other words the social financial costs caused by poor developmental outcomes ought to be redirected to previous stages and applied to preventive strategies, before such poor developmental outcomes occur. Furthermore every researcher is well aware of the fact that governmental and political changes are a reality when (and probably only when) financial savings are part of the agenda.

The author’s aim of this paper, despite her great interest across the whole spectrum of ADHD, was firstly to examine the hypothesised relationship between ADHD and subsequent depression. The demoralization theory, which significant others are provided with (the so-called misinformation), was refuted due to its lack of an empirical sound evidence base and due to other empirical investigations, which argue against this ‘well-established’ theory. Furthermore study 1 of this paper suggest that children with ADHD do not have lower self-perception scores than controls and thus further refutes the demoralization theory, which postulates that: ‘The cumulative effect of years of negativity and social rejection can lead to low self-esteem and negative self-perception. For school-aged children, social isolation and rejection are devastating because children at this age are undergoing rapid changes in the development of their own value and self-worth. Deficits in social skills can lead to feelings of negativity and result in aggressive and self-centred behaviour that, in later life, may result in depression’ (Barber, 2005, pp. 236). The participants of the present study were not displaying negative self-perceptions and thus do not support the causal postulations of the demoralization theory. Secondly the aim of this paper was to investigate the effects of special education schools and public schools and how various school characteristics interact with certain characteristics of the child in order to produce a happy and/or poor school experience for children with ADHD. The term ‘a happy school life’ covers the personal, social and academic aspects of a child and overall it was found that certain child characteristics do indeed interact with certain school characteristics and these will be thoroughly explained shortly.

The discussion will sum up the main findings of the present studies and evaluate their influence on current theories and empirical findings. Secondly the findings of the studies will be evaluated and discussed and their practical implications will be put forward. In other words: ‘How do the findings of the studies contribute to the conceptualisation of these specific areas of ADHD, to the life of the sufferers and to their significant others and to society as a whole?’ Furthermore methodological limitations of the studies will be illuminated and future methodological improvements will be put forward in the hope of future research bodies to replicate and/or further investigate these vital areas of ADHD. The findings of study 1 and study 2 will be discussed separately for clarity purposes and then amalgamate in one grand discussion due to their theoretical overlap. Remember that study 1 found that years at a special education school correlate positively with global self-worth scores and behavioural conduct scores, so the question is: Can study 2 explain the findings from study 1? In other words: ‘Which characteristics of the school prosper positive self-perception scores of this group?’ Let us turn to a discussion and evaluation of the investigation of children and adolescents with ADHD and their self-perception scores.

The self-perception of children and adolescents with ADHD: What did study 1 tell us?
The main findings of study 1, in which the Self-perception Profile Scale for children was administered to 19 children and adolescents with ADHD and 20 children and adolescents without the diagnosis, was that there was no significant difference in self-perception scores between the two groups. The investigation of the self-perception of children and adolescents with ADHD compared to that of the control group did according to the independent t-test not show significant differences across the 6 sub-scales. However it is an intriguing finding that an inspection of the descriptive statistics such as the mean and standard deviation show that children and adolescents without ADHD tend to score higher on the scholastic competence, the social acceptance, the athletic competence, the behavioural conduct and the global self-worth scale, whereas the participants in the experimental group scored higher on the physical appearance scale. Thus the findings from study 1 suggest that children without the diagnosis perceive themselves more positively than children and adolescents without ADHD symptomatology. However do the results from study 1 indicate that children with and without ADHD tend to have high self-perception scores? It is quite difficult to tell due to the lack of norm tables (Coolican, 2000). It is not possible to establish whether the participants are within the normal range of self-perception scores or not, because there are no standardised statistics drawn from the normal population, with which these scores can be compared. However, the author argues that it seems that the experimental group and the control group do indeed perceive themselves positively since the minimum mean score is 15 out of a maximum of a score of 24 (see Table 2). If the participants on average perceived themselves negatively then the mean score would not exceed a score of 12. As the reader might remember each of the six items of the six sub-scales is scored on a 1 to 4 point scale, where a total score of 6 is very negative self-perception, a total score of 12 is negative self-perception, a total score of 18 is positive self-perception and a total score of 24 is very positive self-perception. However norm tables are very much needed to accompany this self-perception scale, in order for children to not only be compared to a control group, but also to be compared to the normal population. Thus if the score in the normal population is 20 on the physical appearance, then a score of 15 in these groups indicate poorer self-perception than the normal population on this particular sub-scale. Thus it is of great importance to develop norm tables to be able to interpret the scores more properly (Coolican, 2000). The point of contention, however, is that both groups tend to perceive themselves positively and that there is no significant difference between their scores across the six sub-scales. Another interesting aspect, which might explain these findings to a small extent, is the fact that the multiple regression test suggests that the number of years a child has attended a special education school correlates positively with self-perception scores on the behavioural conduct scale and the global self-worth scale. Thus characteristics of the school (yet unidentified) might prosper certain aspects of self-perception of this group of children. This theory or idea will be discussed in depth when outlining the findings of study 2. The authenticity of the findings of study 1 is supported by the reliability scores obtained across the six sub-scales, which in most cases exceeded the statistical threshold. The reliability scores across the six sub-scales are ranging from .5 to .9, where .6 to 1 is considered as high reliability scores (Coolican, 2005). The reliability analysis suggests that the test is indeed reliable and can be administered to Danish special sub-populations (ADHD) and to the normal Danish population. So how do the findings of this study fit in with current empirical investigations and theories?

How do the findings from study 1 affect current theories?
As the reader might remember from the introduction there is discrepancy between research findings investigating the self-perception scores and self-esteem levels of children and adolescents with ADHD. As the reader might also remember the Self-Perception Profile Scale for Children (Harter, 1985) measures self-perception in the scholastic competence area, the social acceptance area, the behavioural conduct area, the physical appearance area and the athletic competence area. Furthermore the global self-worth scale measures the child’s self-esteem and measures how children view themselves overall and whether they are happy with themselves and the way their life is going (Barber, 2005). Thus it is only the self-worth scale, which indicates the level of a child’s overall self-esteem unless the Importance Rating Scale has been applied to the other scales for self-esteem levels to be calculated as well. Furthermore there is discrepancy between the instruments applied across the studies and comparisons across these studies can be difficult due to the disparate application of measurement tools. Let us however turn to the question: How do the findings from the present study fit in with previous findings?

The present study seems to support the findings by Hoza (1993), who found that ADHD boys did not rate themselves significantly worse than controls on global self-worth and in other self-perception domains on the Self-perception Profile Scale for Children (Harter, 1985). The participants, however, in the Hoza (1993) study were between 8.5 to 13 years of age, which is slightly younger than the participants in the present study (mean age 13). Furthermore the participants in the Hoza (1993) study had comorbid conduct disorder and comorbid oppositional defiant disorder and comorbidity was not accounted for in the present study. Last but not least the ADHD boys in the Hoza (1993) study were participants in the 1990 Children’s Summer Day Treatment Program at the Western Psychiatric Institute in Pennsylvania and treatment was not accounted for in the present study. So why are these points important? They are important to the extent that they can explain the findings. It should be noted that it is not in the author’s interest to refute the fact that children and adolescents with ADHD actually have positive self-perception levels, but it is of great importance to consider the external factors that might affect these scores. In other words it is of the greatest importance to cancel out possible confounding variables, so that the conclusion that children and adolescents with ADHD have positive self-perceptions is a valid conclusion, so that this group is not neglected in this important area. The findings by Hoza (1993) could be explained by the theory of Harter (1985), which postulates that self-perceptions are distorted in a positive direction till the age of 14 and thus it could be that the self-perception scores of this study could be explained as naturally occurring developmental happenings. However this alternative explanation seems to be refuted by the present study, in which the age of the participants ranges from 7 to 16 years of age and thus exceeds the proposed age stage for the occurrence of distorted positive self-perceptions (Harter, 1985). Moreover the presence of comorbid conduct and oppositional defiant disorder could also explain the positive self-perception scores, because this sub-group have been found to have a great self-serving bias (the tendency to attribute the causation of positive events internally and negative events externally) (Blackwood, 2003). Moreover the feature characteristic of these diagnoses, such as lying, may explain the self-enhancing distortion in these children’s self-reports of self-esteem (Slomkowski, 1995). The present study did not account for comorbid disorders and thus neither refutes nor accepts this alternative explanation. Last but not least the self-perception scores in the Hoza (1993) study could be explained by the presence of supportive treatment, which was not accounted for in the present study either. The content of the supportive treatment is not described in the journal by Hoza (1993) and thus it is difficult to put forward explanatory theories and possible correlations between active ingredients of the treatment and self-perception scores.
Slomkowski (1995) carried out an adult follow-up study on 65 hyperactive children and 62 matched controls and found that individuals who had been diagnosed as hyperactive in childhood reported lower self-esteem in adolescence than matched controls. It is difficult to establish whether the present study refutes or supports the study by Slomkowski (1995), because of the great age difference between the two studies. Unfortunately Slomkowski did not measure self-esteem at age of diagnosis (6-12 years of age) and thus a valid comparison is not a possibility. And one can only hypothesise about the results of a possible follow-up of the participants in the present study.

Dumas (1999) found that all averages of the dimensions of self-perception were lower among the 57 hyperactive children than in the control group. The children were 6 to 11 years of age and there were no comorbid disorders present. This study seems to refute the theory of Harter (1985), which postulates that young children have distorted positive self-perceptions. On the other hand it seems to support the theory of Blackwood (2003), which suggests that comorbid disorders prosper great self-serving bias attributes, because comorbidity was indeed accounted for in the study (Dumas, 1999). The participants did not have comorbid conduct or oppositional defiant disorder and thus they do not obtain high self-perception scores according to the theory of Blackwood (2003). It seems that the present study refutes the study by Dumas (1999), but it is difficult to establish, due to lack of accountability of comorbidity in the present study. It could be that the participants of the present study do have comorbid disorders, which might explain the positive self-perception scores in the present study. However, much more research is needed, before one can make valid conclusions regarding the relationship between comorbid disorders and its effect on the social cognitive processes of this group such as the self-serving bias. Perhaps the presence of comorbidity is not as influential as Blackwood (2003) argues?

Hoza et al (2004) investigated the self-perception of 487 children (aged 6-11) diagnosed with ADHD and comorbid disorders such as conduct disorder, depression, anxiety (DSM-IV) and 287 local normative comparison groups. The children were participants in the ongoing MTA study (MTA Cooperative Group, 1999) and the measures were administered 10 months after treatment termination for the MTA treated ADHD participants. The SPPC (Harter, 1985) was applied and it was found that children with ADHD had higher self-perception scores in all domains than did the control group. The finding by Hoza et al (2004) could be explained in terms of the theory Harter (1985) and the theory of Blackwood (2003). The children might have obtained these significantly positive self-perception scores due to the presence of comorbidity and its relation to self-serving bias attributes (Blackwood, 2003) or they might have obtained high scores due to distorted self-perceptions prospered by their young age (Harter, 1985). Moreover they might have obtained the high self-perception scores due to active ingredients of the treatments not yet identified. It seems though that the present study supports the findings by Hoza et al (2004) to a certain extent. The participants of the present study did not score significantly higher as did the participants in the Hoza et al (2004) study. They did, however, hold positive perceptions of themselves.

Barber (2005) compared the self-perceptions of 38 children diagnosed with ADHD (DSM-IV) with 39 control participants between 8-12 years of age. The SPPC scores revealed that the children diagnosed with ADHD score significantly lower on the behavioural subscale than do children without ADHD. Furthermore there were negative trends in four out of the five areas, suggesting that children with ADHD suffer from a lower overall self-perception than children without ADHD. These findings could be due to the fact that comorbid disorders were not present in the group (Blackwood, 2003, Johnston, 2005). Moreover the findings of the study seem to refute the theory of
Harter (1985) since the participants did not have distorted positive self-perceptions (Barber, 2005). However as the reader might recall Harter (1985) also postulates that self-perceptions can be negatively distorted if negative life experiences have been prevailing. However the chances of the participants all having experienced severe negative life experiences is statistically unlikely. The present study however seems to refute the findings by Barber (2005).

Bussing (2000) found that self-esteem scores applying the Piers-Harris Self-concept Scale were within the normal range in 143 children with ADHD aged 8 to 18 years of age. The present study seems to support the findings of Bussing (2000), in that the scores on the self-worth scale were positive. Bussing (2000) did however not account for the presence of comorbid disorders and thus the findings could be explained in terms of the theory of Blackwood (2003). However Bussing (2000) did account for type of school, which the present study did as well. Bussing (2000, pp1267) argues that: ‘young special education students with ADHD did not experience, on average, self-esteem problems’. The present study seem to support the findings by Bussing (2000) as the findings of the present study suggest that children and adolescents at a special education school do not have significantly poorer self-perception scores and self-esteem scores than controls. The other studies investigating self-perception and self-esteem levels of children and adolescents with ADHD did not account for type of school. And the reader will experience shortly that the type of school can indeed influence self-perception scores (Harter, 1985). A finding of the present study, which might further support the importance of type of school, is the finding that age of diagnosis and years at the special education school positively correlates with self-perception scores on the behaviour conduct scale and the scores on the self-worth scale. However an alternative explanation is that early diagnosis indicates early treatment (pharmacological and psychotherapeutically) and the special education school might not have such a great impact (Brook, 2005). These arguments will be discussed subsequently.

So it seems that there is great discrepancy between the findings of empirical studies investigating the self-perception of children and adolescents with ADHD. This has resulted in different theories aiming at explaining these findings and none of the theories are empirically valid. It has not been firmly established 1) how comorbidity affects self-perception scores, 2) how active ingredients of treatment influence self-perception, 3) how age influences self-perception scores, 4) how home environment influences self-perception scores, 5) how severity of symptoms influence self-perception scores and 6) how characteristics of the school influence self-perception scores. The author argues that all the variables are influential, but their exact mode of action and interaction needs identification. Thus these controversies should be thoroughly investigated in empirical studies as findings regarding this matter are beneficial in the realm of prevention and treatment. The author’s wish is to resolve these matters all together. However the aim of this paper as the title implies is to evaluate the influence of the type of school on self-perception scores.

A final point to consider before explaining the self-perception scores found in the present study is: how do the findings from study 1 affect the demoralisation theory of ADHD and subsequent depression? The present study found that children and adolescents with ADHD did not score significantly lower across the six sub-scales than controls. This does not seem to fit in with the postulation of the demoralization theory, which is as follows: ‘The cumulative effect of years of negativity and social rejection can lead to low self-esteem and negative self-perception. For school-aged children, social isolation and rejection are devastating because children at this age are undergoing rapid changes in the development of their own value and self-worth. Deficits in social skills can lead to feelings of negativity and result in aggressive and self-centred behaviour that, in
later life, may result in depression’ (Barber, 2005, pp. 236). The participants of the Barber (2005) study were between 8-12 years of age and the author argues that such a predictive claim based on the results of the study is invalid and is providing sufferers and their significant others with invalid information regarding the causes of developmental outcomes. However the study by Slomkowski (1995), which found low self-perception scores in adults with ADHD could support the demoralization theory to a small extent. Whether these participants develop subsequent comorbid depression is not known and thus does not firmly support the demoralization theory. And as the reader might recall low self-perception and self-esteem are a function of depression and not an etiological precursor of depression (Raedt, 2005). Thus the link between ADHD and depression is probably to be found by empirically investigating the alternative explanations put forward in the introduction (Brown, 2000, McEwen, 2002, Mitchell, 1998, Sajdyk, 2004, Vilhjalmson, 1993). It should be noted that depression is a prevalent comorbid condition among the ADHD group (15-75% of cases) and the causal link should be established to alleviate the problems experienced by this particular group (Brook, 2000, Ezelio, 1999).

It seems that some children with ADHD have low self-perception scores and so does children without the diagnosis. The author does not wish to establish whether or not children and adolescents with ADHD have poor and/or positive self-perception scores, because this group does indeed display self-perception scores across the entire spectrum due to firstly the heterogeneous nature of ADHD and secondly due to the impact and interaction of various external and internal risk-factors (Grant, 2003). Thus the claim by Hoza (2002, pp. 268): ‘it is generally assumed that children with ADHD have lower self-concepts than do their age mates, largely due to their difficulties in the academic, social and behavioural domains. Both parents and teachers of ADHD children voice concern about the children’s self-esteem and clinicians often list improved self-esteem as treatment goals’ is not entirely valid. It is indeed an assumption as Hoza (2002) puts it, but this assumption is not empirically valid. However the author’s aim is to disentangle, which conditions might prosper positive self-perceptions in this group of children as happiness depends on self-perceptions and most importantly on self-esteem. Let us turn to the theories put forward in explaining positive self-perception and self-esteem scores in children and adolescents with ADHD.

Explaining the self-perception scores of children and adolescents with ADHD

Several theories and explanatory models have been put forward in explaining why children and adolescents with ADHD obtain high scores on self-perception and self-esteem scales. So why has there been this great concern about or interest in children with ADHD and positive self-perception scores? To return to the argument by Hoza (2000) it seems to be interesting due to the impairing symptomatology of ADHD. It is well established within research on ADHD that the symptoms of ADHD impairs the child in behavioural, personal, social and academic domains and thus it seems ‘reasonable’ to assume that this particular group perceives themselves negatively across these domains. However as the reader has experienced this is actually not the case: Children and adolescents with ADHD tend to (at times) perceive themselves positively despite their impairing symptomatology. It should be noted that the severity of symptoms and impact of risk-factors differ within the ADHD group and thus self-perception scores are not uniform within this particular group (Bussing, 2000). Furthermore the manifestation of symptoms is heterogeneous and one individual with ADHD might not be impaired in the social domain, whereas another individual might be
impaired in this domain and so on. Putting these reflections aside let us have a look at how these positive self-perception scores can be explained.

Firstly they can be explained by the theory of Harter (1985), which the author has already mentioned. The theory of Harter (1985) postulates that self-perceptions in children and young adolescents tend to be positively distorted due to the fact that they do not possess the cognitive ability to correctly deduce, which hypotheses about the self are true or not. This theory by Harter (1985) is not entirely correct as the reader has experienced, because then all subjects (with and without ADHD) would (almost) never score negatively on the Self-perception Profile Scale for Children. The author agrees with Harter (1985) that the process of evaluating oneself requires great cognitive ability and cognitive distortions might occur in some, but not all cases. Another intriguing theory of Harter (1985), which might explain the findings of the present study, is the importance and influence of the social comparison group, with which the child compares him/herself with. Harter’s research has documented the fact that children’s scores are directly influenced by the particular social reference groups they are employing. Harter (1985) found that the scholastic competence scores of mainstreamed mentally retarded children (50 to 70 IQ range) are higher than the scores of mainstreamed learning disabled children within the normal range of intelligence. Individual interviews revealed that the mainstreamed retarded children compare their performance to other mentally retarded children, whereas the learning disabled child’s comparison group constitutes the regular class room children. Thus the mentally retarded children do not consider their scholastic performance to be deficient compared to other mentally retarded children, whereas the learning disabled child feels that they are less scholastically competent, compared to most regular class room children (Harter, 1985). These findings explain the findings of the present study to a great extent. As the reader might recall additional data was collected on which group the children with ADHD compared themselves with and it was found that this group did indeed compare themselves with other children with ADHD at the special education school. The findings of Harter (1985) further support the findings by Bussing (2000, pp1267) who found that: ‘young special education students with ADHD did not experience, on average, self-esteem problems’, even though Bussing (2000) does not explain his findings in terms of this theory. It could be argued that the findings of Harter (1985) furthermore support the findings of Hoza (2004) who found that children with ADHD had higher self-perception scores in all domains than did the control group. The participants of the study were participants of the grand MTA study, where part of the treatment regime was a three month summer camp programme and it could be that the participants in this study compared themselves with other children with ADHD (The MTA Cooperative Group, 1999). However one can only guess, since no additional data was collected in the study. The theory of Harter (1985) does indeed explain the findings to a great extent and both the study by Harter (1985) and the present study are indicative of great practical implications, which will be put forward later in this paper. However the validity of this proposed explanatory theory would be strengthened by comparing the self-perception of children with ADHD who are attending a public school to those children attending a special education school, which will also be discussed later.

McMenamy (2005) carried out a rather intriguing study on how children aged 6 to 12 years of age understand their condition. Overall it was found that children with increasing age understand their condition as a biological condition emphasising the neuropsychological and genetic underpinnings of the disorder. The children might have been exposed to these theories through conversations with parents and professionals through educational materials and due to the fact that the majority of children are on medication (McMenamy, 2005). Adopting a biological theory of the etiology and treatment of ADHD might be self-protective for the children with the condition and might make
children with ADHD attribute their failures to the fact that they have a medical problem. Thus upholding a positive perception of themselves (McMenamy, 2005). The exact link between children’s understanding and acceptance of their condition and of their self-perception is not empirically established yet (Hoza, 1993). However it could be that the reasoning of these children is as follows: ‘If I did not have ADHD, then I would be able to do my homework on time’ and then they respond accordingly to the items. This is pure speculation on behalf of the author and the author does not refute the fact that these children might really perceive themselves positively across the domains, because they really do possess the appropriate abilities. It is however vital to investigate the possible theories and explanations in order to investigate which factors might prosper positive self-perceptions.

A final explanation along the same lines as the above mentioned theory is the postulation that children with ADHD might have positive illusory self-concepts (Hoza, 2002). The positive illusory self-concepts of children are usually investigated in laboratory tasks, which require a child with ADHD to report on their performance immediately following their participation in a laboratory task. Although this type of study taps self-evaluations of performance for a single event only, it nonetheless addresses the issue of how children view themselves under conditions in which their actual level of performance is known (Hoza, 2002). Under these controlled conditions, self-evaluations that exceed actual performance levels indicate positive illusions. Hoza (2002) carried out a study in order to investigate the positive illusory self-concepts of 195 children with ADHD and found that ADHD boys overestimated their self-perceptions more than did the controls in the scholastic, social, and behavioural domains, relative to a teacher-rating criterion. ADHD boys tend to overestimate their competence the most in domains in which they are most impaired. This positive illusory self-concept is viewed to serve a self-protective role for children with ADHD, allowing them to cope on an ongoing basis despite failure experiences (Taylor, 1988). In other words positive illusions may be adaptive for these individuals, but concern has been raised regarding the potential dangers of positive illusions (Colvin, 1995). Positive illusions may serve as an impediment to treatment progress in that some level of insight or problem recognition may be necessary for these children to be motivated to work on their difficulties (Hoza, 2002). The findings of the present study could be explained in terms of a positive illusory bias. However no additional teacher ratings were obtained and thus it is difficult to establish whether the results can be explained in terms of a positive illusory bias.

So it seems that the results of the present study can be explained in terms of several theories. However the theory which explains the findings most appropriately is the finding by Harter (1985) and the importance of the social comparison group. The present study cannot refute the other theories, but does however raise concern about the tendency to question the self-perception of children and adolescents with ADHD. It seems to be the aim of research to refute the fact that children and adolescents with ADHD might actually have true positive self-perceptions. Self-perception is not necessarily a product of actual performance in this group or in any other group for that matter and it can act as a protective mechanism (Taylor, 1988), despite its possible impediment on treatment progress (Colvin, 1995). However to what extent does positive illusory self-concept actually impede on treatment progress? How would positive illusory self-perception regarding physical appearance and athletic competence impede on treatment progress? And how would positive illusory self-perceptions in the academic competence domain impede on treatment progress? It is easier to improve a child’s academic skills, if a child is motivated to learn and motivation springs from a belief that the child is capable of completing a task (Wood, 2002). And how will positive illusory self-perception scores on the global self-worth scale impede on treatment
progress? If the child is happy with his/her life and him/herself as a person, then the child might not be motivated to engage in therapy. And if the child is happy with him/herself, then does the child really need therapy in this area and who should be the one to decide? Positive illusory self-perception scores on the social competence and behavioural conduct scale can probably have some effects on treatment progress, if the child is experiencing problems in these specific areas. If the child has positive illusory self-concepts on these scales, then it can be a challenge to alter the children’s behaviour (if necessary) in order to improve their social skills and social interactions (Barkley, 1999). However positive illusory self-perceptions are mainly investigated in an experimental research paradigm, studying task related performances and not social and behavioural skills as such (Hoza, 2002). The Study by Hoza (2002) did however investigate positive illusory self-perceptions in these domains and found that ADHD boys overestimated their self-perceptions more than did the controls in the scholastic, social, and behavioural domains, relative to a teacher-rating criterion. However is the teacher rating criterion a valid judge of the performance and illusory concepts of this group? The teacher rating procedure and process could be ‘contaminated’ by the teachers’ negative attitude towards the ‘disruptive’ child and/or adolescent (Hoza, 2002). Thus it is not exactly known whether these children and adolescents have positive illusory self-concepts in these specific domains. Perhaps the focus of research should be to investigate factors, which might prosper positive self-perceptions (may they reflect actual performance or not) in the spirit of positive psychology instead of focusing solely on the problems (Oestrich, 2004). It should be the aim to improve their quality of life and as already mentioned happiness depends on positive self-perceptions (Harter, 1985). Thus it is important to establish just how ‘devastating’ it is for this group to perceive themselves more positively than their actual performance, if that is really the case. As the reader might experience this discussion is intriguing and never ending and the author hopes that the reader can form his/her own ideas regarding this intriguing subject matter. Let us now turn to an evaluation of the Self-Perception Profile Scale for Children (Harter, 1985), since it is of utmost importance that the measurement tool is valid and does indeed measure self-perception.

**Evaluating the Self-perception Profile Scale for Children**

The Self-perception Profile Scale for Children (Harter, 1985) possesses both positive and negative qualities. As already mentioned the SPSC is capable of providing a meaningful distinction between an individual’s adequacies across domains, a so-called profile. This profile enables clinicians to obtain information regarding the child’s problem areas and a child’s strengths in areas, which can act as a guideline for treatment aims, if treatment is necessary (Harter, 1985). Furthermore the SPSC has been found to have high reliability scores in previous studies and in the present study, which implies that the child comprehends both the content of items and the requirements of responding (Dumas, 1999, Harter, 1985). Furthermore the assessment tool include practice questions that the child must adequately master before progressing to the rest of the questionnaire and this practice is sound and clinicians are urged to incorporate this practice into child measures (Johnston, 2005). However the validity of the SPSC has not been investigated and it is difficult to establish the validity of this scale. In other words is it a useful scale in measuring self perception and/or self-esteem? Firstly it is a quick test to administer to a large group of children, if one solely wishes to obtain self-perception scores across various domains. However if one wishes to obtain the self-esteem scores across the domains applying the Importance Rating Scale, then the test is indeed time-consuming. And it is difficult for (in this case) a special education school to accommodate a researcher in his/her pursuit and it is difficult for the children to sustain their attention for such a
long period of time (Barkley, 2000). As the reader might recall self-esteem scores are high in areas, which are important to an individual and in which an individual perceives his/her performance and abilities as adequate. This quote further illustrates the individual differences in importance and thus self-esteem: ‘What is a shining asset to one person is a disgraceful liability to another. One person is proud of being rude to people: another is ashamed of anything that could be construed of as rudeness and is proud of his sensitivity’ (Horney, 1950, pp. 93). The global self-worth scale is the only measure of actual self-esteem levels in the present study and other studies due to the time consumption related to the Importance Rating Scale. Moreover high global self-esteem scores on a scale is not necessarily a product of positive self-perceptions across the five sub-scales, because the importance of these is not known (Harter, 1985). Thus the SPSC is not capable of capturing all aspects of self-esteem, due to the selective items presented in the scale. An individual might score high on the global self-worth scale, because he or she perceives him/herself positively, because he or she is good at painting, a good swimmer or a daughter is nice to people and so on, which are important areas for that particular individual. Self-perception and self-esteem is a highly subjective affair and the normative approach might not be appropriate, if it is to be used as a treatment planning tool. As the reader will experience shortly a lot more is to be gained by adopting an idiographic approach (Overholser, 1992, Sinha, 1998). So is the scale a valid measurement tool of self-perception?

One might argue that of course it does measure self-perception and the author does not refute this fact. But it only measures a small portion of the self-perception domain. Six sub-scales do not constitute the whole area of self-perception and if it does not measure self-perception scores on sub-scales, which are important to the child, then it cannot be a useful test (Overholser, 1992). Again this normative approach, which dictates what ought to be important to the child (academic performance, behavioural conduct, social competence, athletic competence and physical appearance), does not reflect the entire self-perception of the child (Sinha, 1998). A test is valid to the extent that it measures what it is intended to measure (in this case self-perception) and to the extent that it can predict certain outcomes (predictive validity) (Coolican, 2000). If the content of the sub-scales are not important to the child, then it does not affect the overall self-esteem of the child and thus it cannot predict neither positive nor negative outcomes. Additional data on the importance of which the children attach to the different domains was collected in group 3 (8 males) at Kasperskolen and the findings are intriguing. Six of the children attached great importance to the physical appearance domain, the academic competence domain, and the social competence domain, but two of the children did not attach great importance to any of these domains except for the social acceptance domain. None of the children attached great importance to the athletic competence domain and the behavioural conduct domain. So it seems that the SPSC is valid to an extent, when administered to Danish children, because it does incorporate aspects of self-perception, which are important to the and thus allow the test to have potential predictive validity (Coolican, 2000). A prediction to test the predictive validity could be that positive self-perception and high self-esteem in a given domain, which is important to the individual, predicts subsequent quality of life etc. The additional findings seem to suggest that the self-esteem levels are high in this group, because they had positive self-perceptions in domains, which they found to be important. However to draw valid conclusions regarding this matter, one needs to administer the Importance Rating Scale (Harter, 1985). However two of the sub-scales are not perceived as important to the children and thus these scales do not seem to be useful in measuring the self-perception of children and adolescents with ADHD in Denmark. To return to the point in the discussion about validity and cultural sensitivity it seems that behavioural conduct and athletic competence are not as important domains in Denmark,
as they probably are in the States. Thus the content of the scale should be adjusted to a country’s
cultural values in which it is to be administered (Coolican, 2000).

So it seems that there are improvements to be made with regard to the application of the
measurement tool. Before we turn to these future improvements let us turn to the other
methodological limitations of the present study.

**Methodological limitations of study I**

The present study suffers some methodological limitations regarding its procedure and its sample
characteristics. Firstly the procedure of the experimental group (ADHD) differed according to the
teacher’s judgments about the most appropriate testing conditions. The procedural administration of
the test could have had an effect on the results especially in group 1, where the children filled out
the questionnaires accompanied by the teachers or the researcher. The lack of anonymity that these
children were experiencing by the presence of an adult could have prospered responses, which are
socially desirable (Coolican, 2000). Furthermore the children were sitting right adjacent to each
other in group 2 and 3 and thus might also have responded in a socially desirable manner to impress
their fellow students, who could actually see how they responded to each item. In group 4, however
there were no confounding variables, which might have influenced the children’s responses to the
questionnaire. The different procedures can indeed have had an impact on the scores and it has also
had an effect on the data material, since there were no missing values in any of the data sets, which
is quite amazing.

Secondly there are some limitations with regards to the characteristics of the sample, which might
have influenced the results and subsequent interpretations of the findings, due to lack of resources.
Firstly the diagnoses of the children and adolescents in the experimental group was not established
or validated by the researcher. The participants have probably received the DAMP diagnosis,
because this has been the prevalent diagnosis in Denmark until very recently. Secondly the presence
of any comorbid conditions is not known by the researcher. Thus it can be difficult to firmly
generalize these findings to children with ADHD and other subgroups for that matter. Thirdly the
presence of any disorder in the control group is not known by the researcher either. Thus the
researcher is not confident that any of the children did not have any disorders or conditions.
Furthermore it is difficult to generalize these findings to other children and adolescents with ADHD
due to the fact that the sample was restricted to one special education school. And moreover it is
difficult to generalize these findings to females with ADHD, because the sample was predominantly
males (18 males, 1 female).

Thirdly there are some methodological flaws regarding the age of the participants and the
application of the Self-perception Profile Scale for Children. As Harter (1985) argues the initial
target population for the scale is age 8-13, but can be employed with older subjects. However it
does not provide a sufficiently rich and/or differentiated picture of the adolescent self-concept
(Harter, 1985). However due to a lack of participants the researcher decided to administer the
questionnaire to 13 to 16 year olds with this notion in mind. The adult version contains three additional sub scales which tap romantic appeal, close friendships and job competence (Harter, 1985). The adolescent version was not readily available to the researcher and the translation process of the Self-perception Profile Scale for Children, was time consuming. The fact that the scale was not age appropriate might have led a majority of the participants to view it as boring and laborious. Perhaps if the adult version had been administered then the findings would be more valid (Harter, 1985).

Now the methodological limitations of the present study have been outlined, thus let us turn to future improvements, which are greatly needed in this area of research.

**Future improvements**

There are several methodological improvements to be made in the present study and in other studies investigating the self-perception and self-esteem of children and adolescents with ADHD. With regard to the sample the participants with ADHD should be greatly increased and drawn from different populations such as different special education schools and public schools and from various geographical areas. It might be that there is indeed a difference between the public school and the special education schools and also differences within these two types of schools. It might also be that there are geographical differences due to the fact that there is a difference between the counties treatment offers available to this group of children. Furthermore additional information should be collected about the child such as comorbid conditions, response to medication, age of diagnosis, type of school, supportive therapy etc. The collection of additional information will provide research bodies and clinicians with information about which factors might influence (if they have an influence) positive and/or negative self-perception scores. Thus a researcher will not only be able to establish whether or not this group of children and adolescents with ADHD have positive perceptions of themselves, but hypotheses about which factors are influential ought to be generated as well. Moreover it is of great importance to increase the female ratio, so the findings can be generalized to females with ADHD as well. Perhaps there are gender differences in the self-perceptions of males and females, which need to be identified. And perhaps these are important in the treatment of females and males. Only future research can tell. With regards to the design it is of utmost importance to carry out longitudinal studies in order to tap the development of self-perception and self-esteem (Harter, 1985, Zimmerman, 1996). It would be beneficial to measure the self-perception and self-esteem of this group from when they are diagnosed into adulthood, because this will provide a more valid picture of the self-perception of this particular group. Such a longitudinal study should include the accountability of other variables such as response to medication, type of school etc, to test whether there are any correlations between self-perception and self-esteem scores and other variables. Such correlations might provide researchers and clinicians with information suggestive of which factors influence self-perception scores. This information can be valuable in preventing and treating this particular group. As the author has emphasised previously it is not only important to investigate the self-perception levels, but also to investigate, which factors facilitate positive self-perception scores.

Another improvement, which is important, is to establish whether the participants with ADHD actually meet the diagnostic criteria of DSM-IV and whether comorbid disorders are present. It is of the greatest importance that findings regarding children and adolescents with ADHD do actually
have ADHD. This might seem self-evident, but unfortunately it seems to be neglected by several researchers and clinicians, as was described in the introduction. One cannot make cross-cultural and international comparisons or generalizations, if the groups they are comparing do not meet the same diagnostic criteria (Coolican, 2000). So there are several improvements to be made which concerns the sampling and the design. Moreover there are improvements to be made regarding the procedure, which was not standardized in the present study. Several confounding variables exist in this unstandardized procedure as we have seen. Thus it is important to administer the questionnaire under standardized procedures provided by Harter (1985), so that the results are valid and comparisons can be readily made across groups and across countries.

A vital point to consider is the usefulness of the SPSC, when it is administered to Danish children (Harter, 1985). Firstly it was found that two of the sub-scales were not as important to Danish children and adolescents as they are to American children. Thus it would be beneficial to investigate which domains are important to Danish children (REF PERNILLE HVIID). Focused group interviews could be carried out in order to investigate this matter and subsequent changes could be made to the Self-perception Scale. This might make international comparisons difficult; however comparisons could still be made on the scales, which are similar in content. Moreover it is much more important that the scale is indeed a valid measurement tool. A third improvement, which should be made, would be to include the Importance Rating Scale in the actual scale. Thus the child will respond to the importance of an item after responding to each question. This will be time saving for the participants and will indeed provide a more rich picture of the child’s self-perception and self-esteem. And this in turn might have an impact on treatment strategies (Dumas, 1999). The predictive validity of the scale will also be more readily established. In other words self-esteem scores have greater predictive validity than do self-perception scores per se (Zimmerman, 1997). Self-perception scores in a domain, which is not important to an individual has minor effects on an individual’s life and thus neither positive outcomes nor negative outcomes can be predicted from such a score (Harter, 1985). So should the normative approach such as the SPSC be the most desired measurement approach? Some researchers argue that: ‘Self-esteem will mean different things to different people. Therefore, self-esteem is best measured through an idiographic approach’ (Overholser, 1992, pp. 639). The idiographic approach utilises a Self-esteem worksheet, where the respondent is asked to 1) identify the areas relevant to self-esteem, 2) rate the subjective importance of each area and 3) rate the self-perceived success in each area (Overholser, 1992, Sinha, 1998). Overholser, 1992, pp. 644) argues that: ‘it provides information about each subject’s unique view of his or her own perceived strengths and weaknesses, not hindered by the experimenter’s preconceptions. Thus the professional can gain insight into the subject’s phenomenological experience of him or herself’. The idiographic approach is very intriguing and definitely has great implications for treatment concerning self-esteem problems. However the author argues that the SPSC (Harter, 1985) is probably the most appropriate testing device in research settings, due to its simplicity. However if an individual obtains low scores on the global self-worth scale (I am not a worthwhile person), then the idiographic approach could supplement the SPSC, because it provides a much more thorough picture of the individual’s self-esteem and thus aids a clinician in the treatment process (Sinha, 1998).

It seems that there are several future improvements to consider when carrying out research on self-perception and self-esteem of children and adolescents with ADHD. These future improvements include an increase of sample size and an inclusion of participants from various ages and from various geographical areas. These considerations would greatly improve the generalizability of the findings. Furthermore methodological improvements would include the execution of longitudinal
studies (preferably not cross-sectional) in order to thoroughly investigate the reliability of the scale and to investigate the development and instability/stability of self-perception and self-esteem levels of this particular group. Moreover additional data should be collected in order to identify potential factors, which might positively and/or negatively influence these scores, since these might have great treatment implications, especially in the preventive realm of treatment. The application of the Self-perception Scale for Children also calls for future improvements such as the inclusion of the importance Rating Scale in the actual test. As already mentioned self-esteem scores have more predictive value than do self-perception scores and thus are of greater value to investigate. Furthermore adjustments should be made, when administering the SPSC to Danish children and adolescents in order for the test to be more valid. Despite all these methodological improvements, what can be inferred from the findings of study I? In other words: What are the potential practical implications of study I?

Practical Implication of study I

As previously mentioned several theories have been put forward in order to explain self-perception and self-esteem scores of children and adolescents with ADHD (Harter, 1985, Hoza, 2002, McMenamy, 2005) and much more research is needed in this area, before any valid conclusions can be drawn about this vital matter. The present study, however, seem to suggest that the school does influence the self-perception score of this group, but does however not reveal exactly which aspects are indeed influential. However the theory of Harter (1985), which emphasises the importance of the social comparison group seem to explain the findings of the present study and other studies, which found positive self-perception scores (Bussing, 2000, Hoza, 2004). It seems that the children were in fact comparing themselves with other children with ADHD and this might have had an influence on their self-perception scores (Harter, 1985). So if children with ADHD have more positive self-perception scores is it not more beneficial if they attend a special education school? If self-perception and self-esteem scores seem to be a product of the special education school, does not imply the importance of attending a special education school? To answer these questions one needs to investigate whether children and adolescents, who are attending a public school do in fact, have more negative self-perceptions, because they compare themselves with children without similar symptomatology. This is however a great enterprise due to the fact that no school is allowed to inform external bodies of a given child’s disorder (Loven om Beskyttelse af Menneskerettigheder). The author furthermore argues that self-perception and self-esteem scores are not solely a product of the school, but also a product of other factors not tapped by the content of the SPSC (Harter, 1985). These factors include home environment, spare time activities etc and the view which significant other’s hold of the child and/or adolescent (Harter, 1985). However if future research does indeed imply that the attendance at a special education school does in fact pay dividends to positive self-perception and self-esteem in this particular group, then practical implications would include that a place at a special education school is readily available to these children and adolescents and not reliant on the judgment of a social worker in a particular county. As Mehan (1984, pp. 50) argues: ‘The Student’s needs are the first, foremost, and primary basis upon which the educational decision-making concerning placement is to be made’. And this decision needs to in accordance with empirical research suggesting what is most beneficial for the
child and/or adolescent and not on the availability of a given county and on the judgment of a social worker. However the long term effects (may they be positive or negative) of special education school attendance also needs to be empirically established. Does the child maintain the positive self-perception after school completion, when faced with future employment or undergraduate studies or is there a drop in the curve due to the alteration of the social comparison group? And if so how can the special education school prepare this group for these potential changes? These points need to be thoroughly empirically investigated, before any firm conclusions can be drawn. The overall conclusions of study I are, however, that the participants in this study does indeed seem to have positive self-perceptions and high scores on the global self-worth scale, when comparing themselves to other children with similar symptomatology. And the years at a special education school seem to be positively correlated with these scores. So which characteristics of the school and of the child seem to have an impact on the self-perception and school satisfaction of this group? This is the question which we turn to next.

**How study I inspired the execution of study II**

As already mentioned in the introduction the aim of this paper was to investigate the effects of the special education school and public school on a child and/or adolescent with ADHD. A vital lack of information available to this group of children and their significant others are: ‘Will a child and/or adolescent profit from a normal public school or from a special education school for children with ADHD?’ The school situation can be perceived as a risk-factor, because the mere symptoms of inattention, hyperactivity and impulsivity makes it difficult for the child with ADHD to keep up with academic expectations and makes it difficult to make friends, which heightens the risk of poor developmental outcomes. Hoza (2005) found that 52 % out of 165 children with ADHD from a public school were of rejected status, which emphasises how ADHD can impair a child’s social skills. Being an unpopular child tends to make the child feel lonely and feel more depressed than popular children (Coie, 1990). The author’s thought was ‘Will children experience the same problems at a special education school as they seem do at a public school? In other words ‘Will the child experience academic failures and social failures as they tend to do at a public school according to research findings? (Barber, 2005, Brook, 2005, Dumas, 1999, Slomkowski, 1995)? How does a child with ADHD experience the public school and/or special education school and how do the characteristics of the schools affect a child in personal, academic and social domains and their overall quality of life? The findings of study I and the findings of Bussing (2000) seem to suggest that the self-perception of children and adolescents seem to benefit from the attendance at a special education school, due to the first of all the social group, which they compare themselves with (Harter, 1985). However self-perception, self-esteem and a happy school life are not solely a product of social comparison processes, but also a product of several other factors (Barkley, 2000, Whalen, 1990), which needs to be identified. In other words a child at a special education school might feel that he/she performs better with regards to academic performance, which is important to the child, but a happy school life implies other variables such as good peer relations, good pupil-teacher relations and so on (Hechtman, 1999). And if the child (unfortunately) does not experience positive relations in the school setting he or she does not have an overall positive school experience and thus negative outcomes might be the end result (Coie, 1992). The reader should recall that it is the additive effect of certain risk-factors and the presence and/or absence of certain resilient/protective factors, which impacts any given outcome (Loeber, 1991, Rutter, 1985). Thus to solely investigate how the special education school affects the self-perception and self-esteem
scores of this group of children, would be to explain a minimal proportion of a child’s overall school experience. And to infer practical implications regarding educational placements of this group based solely on the aspect of self-perception, would be to neglect the complexity of the child with ADHD and his/her experience at school (Hechtman, 1999). In other words questions like ‘Do you compare yourself with other children with ADHD?’ and ‘Do you feel you have a more positive self-perception, because you compare yourself with other children with ADHD?’ would tell research bodies only a small proportion of the whole complex story, when investigating what makes a happy school life for this particular group (Bronfennbrenner, 1979). Naturally it would be an interesting research enterprise, which could indeed explain the underlying processes of Harter’s Social Comparison Theory (Harter, 1985). Of course self-perception and self-esteem has an influence on the overall quality of life, but self-perception and self-esteem is influenced by characteristics of the school setting, the social environment and home environment. Moreover self-perception and quality of life influence these contexts as well (Bronfennbrenner, 1979, Grant, 2003). It is indeed a reciprocal complex interaction between these parameters, which influences a certain outcome (Grant, 2003). And this interaction is important to identify, when practical implications regarding this matter is to be inferred. Thus study II aimed at investigating the interaction of child characteristics and school characteristics and how they influence a poor and/or positive school experience, since school experience is viewed as an influential factor, which seems to have a great impact on developmental outcomes (Barkley, 2000, Trillingsgaard, 1995). Let us turn to the findings of study II

**A discussion of the findings of study II**

The application of Grounded Theory yielded three categories namely the children’s experience of the two types of schools, the parents’ perception of the child’s experience at the two types of schools and the parent’s attitudes towards the two types of schools. The first category, the children’s experience of the special education schools and of the public school, suggests that the structure of the public school such as the great number of pupils per class can have detrimental effects on some of the children’s school experience. The child’s symptomatology calls for certain considerations, which the public school is not capable of entertaining such as simple instructions, frequent feedback and the absence of distractors (Kutch, 2004, Pliszk, 1999). Moreover the majority of children found the structure of the special education school to be beneficial, but little information was revealed by the interviewees as to how exactly this structure had a positive impact on the children. Secondly the category revealed that the children’s relationship with the teachers and the peers was poor in the majority of cases at the public schools, due to a lack of understanding and consideration. Last but not least it was found that the majority of children viewed the public school negatively and did not wish to return, due to their past negative experiences. However the findings are not uniform and there are differences between the children’s experience and attitude and the reasons for this discrepancy will be described shortly.

The second category, the parents’ perception of their child’s experience at the two types of school, suggests that the lack of structure of the public school is not capable of accommodating for this group of children neither with regards to academic achievement nor with regards to their safety. The children could not keep up with academic expectations due to (for them) the chaotic environment present at the school. Secondly the category suggests that the relationship with the teacher was poor at the public school, due to a lack of understanding of the child’s condition. The relationship with
the fellow students seems to be of a better quality at the special education school in the majority of cases. However the great geographical distance between the home and the special education school seem to influence the after school socializing. Fourthly the second category revealed certain child characteristics, which might influence the child’s experience at school in the social realm and in the academic realm. Positive response to medication seems to have a positive influence on academic performance and quality of social interactions, whereas comorbid disorders seem to have a negative influence on social relations with peers. These characteristics seem to influence the school experience at both types of schools.

The third and final category, parents’ attitudes towards the special education schools and public schools, suggests that the parents are not satisfied with the learning environment or the social environment at the special education school. The parents would like to improve the academic standards of the special education schools in accordance with public school standards (whatever that is?). Furthermore the parents hold the belief that the children will become ‘normal’ (what ever that is?) by modelling/copying the behaviour of ‘normal’ children. Thus they wish for their children to return to the normal public school although there is complete agreement among the parents that the special education school has greatly benefited the child’s quality of life and happiness. These are the overall conclusions of the qualitative analysis of which factors influence a positive school experience of a child with ADHD. It is evident that the perceptions and experiences are not uniform and uni-directional, but are indeed heterogeneous. In other words it is evident that it is an interaction between school characteristics and child characteristics, which influences a positive and/or negative school experience and it is this interaction, which we turn to next.

The interaction of school and child characteristics

The first and second categories revealed that there does indeed exist a complex interaction between various variables, which influence a child’s school experience. Firstly it is evident that children and adolescents with ADHD seem to benefit positively from a positive teacher relationship and these are (according to the data) mainly present at the special education school. The children, who transferred schools, experienced poor relations with the teachers due to the teachers’ lack of understanding and respect. However the boy, who still attends public school, is experiencing a positive relationship with the teacher, due to her great understanding of the child’s condition. Thus this relative characteristic differs across the two types of schools and the reason that the majority of children are experiencing a positive relation ship with the teacher is probably due to their great knowledge of ADHD. And the poor relationship with the teachers at the public school can be explained in terms of 1) a lack of resources, due to the great number of pupils per class and 2) a lack of understanding of ADHD, which could be a product of the teacher education, which does not consider the teaching of competencies when dealing with this group of children and adolescents. Furthermore the teacher-pupil relationship is influenced by the way in which the child and his/her disorder have an impact on the teacher (Andersen, 2004). If the teacher does not feel competent, the teacher might give up on the child, which can indeed have detrimental effects on the child’s school experience and future development (Andersen, 2004). The relationship with the teacher is also influenced by the teachers’ attitude towards the child, his/her personality and his/her personal view of the world (Andersen, 2004). Thus it is a bi-directional interaction between characteristics of the teacher and characteristics of the child, which influences a given developmental outcome. To adopt the ecological model of Bronfennbrenner (1979) it seems that macrosystems, such as the teacher
education degree can have an influence on the micro systems such as the teacher’s competencies and the interaction with the child. However the teacher’s personal attitude towards the disorder (personal ‘containability’) can also have an impact on his/her interaction with the child, despite the negligence of proper training (Andersen, 2004, Hvid, 2004). On the other hand a child’s response to medication, which is firstly influenced by child characteristics such as the child’s neurological basis and secondly influenced by the social services available to the child such as financial aid with medical expenses, also influences the teacher-child interaction. It is evident that positive responding to medication restrains the symptoms of the disorder and thus the child does not take up the entire classroom and is not such a ‘great problem’ for the teacher and thus does not threaten the teacher’s competencies (or lack of competencies) (Andersen, 2004, Godrim, 2004, Nielsen, 2004). Thus several factors are influential in the child-teacher relation and subsequent outcomes (Grant, 2003)

Secondly characteristics of the child such as response to medication and the presence of comorbid disorders seem to have an impact on the relationship with peers. Again the reduction of ADHD symptomatology seems to improve the social interactions with peers at the public school and at the special education school. Furthermore the presence of comorbid conditions, which could be a product of genetic, social and personal factors (Babinsky, 1999, Biederman, 1995, Faraone et al, 2001), seem to have a negative impact on the social relations of a child with ADHD (McArdle, 2004). On the other hand the peers attitude towards the child and his/her condition also seem to influence the peer-child interaction (Hechtman, 1999). This attitude can be a result of the child’s actual behaviour, which can be disruptive, but can also be a product of a lack of understanding of the disorder and the influence of a negative attitude of the teacher towards the child in question (Brook, 2001, Keen, 2004). Thirdly the response to medication can have an impact on the academic learning of the child. The reduction of ADHD symptomatology can make it easier for the child to follow instructions and complete tasks and thus optimise learning (Barkley, 2000, Keen, 2004). These characteristics have been termed relative characteristics, because they differ in nature and quality across the two types of schools. A stable characteristic, which (according to the data) seems to have an influence on a child with ADHD is the structure of the school. Structured lessons and frequent positive feedback seems to have an influence on the child’s learning ability and self-esteem (Jepsen, 2001, 2002, Kutcher, 2004). This again interacts with characteristics of the child such as severity of symptoms. The more severe the symptoms and the poorer the responding to medication, the more structure is needed in order for this group to learn and feel comfortable (Hechtman, 1999).

It is evident that socio-political, social and personal factors interact in a highly complex bidirectional manner in order to produce a certain outcome. It does however seem that a happy school life for the children depends greatly on the quality of the social relations and the structure of the school for some of the children. The relative characteristics can be present at both types of schools, whereas the stable characteristics are present at the special education only and the practical implications of such findings will be discussed later. Overall it seems that the children are very fond of the special education school, because their needs are accommodated for and because they are socializing with children with similar symptomatology. This view, however, is not completely shared by the parents and it is these discrepant attitudes, which we turn to next.

The concept of ‘normality’
The third category reveals that the attitude of the parents towards the social and academic environment at the special education school is negative. The parents believe that the children are not capable of learning as much as ‘normal’ children and that their social skills will be greatly improved, if they were to interact with ‘normal’ children. This category was included in the paper firstly due to its interesting aspects and secondly due to its practical implications and the effect this category can have on a child, if put into practice. The author has already considered the possible pattern of thoughts of these parents regarding the children’s academic achievement (or lack of) and their lack of proper social modelling opportunities at the special education schools. But let us consider these patterns of thought in depth.

The parents are in uniform agreement that the children do not learn as much as they would like them to learn and one of the interviewees do not feel that he is challenged academically at the special education school. The author has already suggested that only future research can tell whether this is an actual fact or not. In other words it is not known whether the children are more capable of learning than what they are learning. Unfortunately the interviews do not paint a thorough picture of the children’s view of the academic environment and level of the public school. If the children, however, are learning what they are capable of learning, then the attitude of the parents reflect a desire to ‘normalize’ their children. The following extract by one of the interviewees is worth noticing, when he asks: ‘Men hvad er normalt?’ (Interview II, line 199). Ablon (1981, pp. 5) defines abnormal or deviant behaviour as: ‘the deviant is one to whom the label has successfully been applied: deviant behaviour is behaviour that people so label’. The social constructionist label ‘normal’ has adopted by the parents, who wish for their children to be ‘normal’. This social construction is influenced by society and not least (almost ashamed) to say a label provided by the psychological society. The wish to ‘normalize’ the children is indeed evident in the parents’ attitude of the social environment at the special education school and is evident in their wish to transfer their children to a public school. The parents’ believe that by placing their children among ‘normal’ children, the children will model the behaviour of other children in true Bandura style without any problems. This is despite the parents being well aware of their past poor experiences at the public school. The reasons for this are multiple: 1) perhaps the parents do not fully acknowledge their children’s impairments or perhaps they do not want to acknowledge them, 2) perhaps they have not been fully informed of these impairments (which seems unlikely, though) or 3) perhaps they have not come to terms with the fact that their child suffers from ADHD and that they do not fit in with ‘the normal society’. It would be interesting to investigate exactly why the parents wish to ‘normalize’ their children, because its practice can have a great impact on the child’s school experience, which in turn can have an influence on the social and personal aspects of the child’s life (Grant, 2003). If a child is placed in a public school (despite their will) the consequences can be detrimental. The symptoms of ADHD can impair the child’s social interaction and the child can be bullied by peers and rejected by the teacher (Hechtman, 1999). This in turn can have an impact on the child’s well being, the child’s home environment and on developmental outcome (Grant, 2003).

Thus it is not solely the availabilities of a given county, which influences the child’s school experience, but it can also be the attitudes of the parents’, which in this case is not in accordance with the child’s needs. Perhaps the parents hold the belief that the public school is really capable of ‘containing’ their child and his/her disorder, despite past experience suggesting otherwise. Let us have a look at the ‘containability’ of the public school

\[\text{This philosophical and anthropological discussion is intriguing, but is not the aim of this paper.}\]
Evaluating the ‘containability’ of the public school

Before evaluating the ‘containability’ of the public school it is important to discuss what containability implies at a political, educational and psychological/pedagogical level. The Law of the public school states that any child, despite disability, has a right to attend a public school in his/her county (Bekendtgørelse af lov om folkeskolen, §36). The ‘containability’ of the public school usually implies that the child despite his/her disability, adapts to the schools values and structure. Thus the school does not accommodate the needs of the child, but the child is expected to adapt to the school’s established norms (Tetler, 2004). The child is expected to learn the entire curriculum, despite their disability in an environment, which does at times not consider the child and his/her disorder. Thus it is the learning and the outcome of learning, which is emphasised by Government Law Officials (Bekendtgørelse af lov om folkeskolen) and if the child requires further assistance with learning the curriculum, he or she is assigned a special tutor (Tetler, 2004). Thus what is meant by ‘containability’ at the political level is that a child, despite disability, can attend a public school and learn the required curriculum. It does not necessarily imply that the child is completely included in the social and academic community of the public school, since they often spend time with a special tutor (Nielsen, 2004, Tetler, 2004). At an educational level ‘containability’ also implies that the teacher teaches the child the curriculum. The success on this enterprise depends greatly on the personal ‘containability’ of the teacher. An example of this is illustrated by the case of Martin in Hviid’s (2004) analysis. The teacher found that Martin, who had a learning disability, improved his reading skills by reading cartoons under the table, which is of course not part of the curriculum. This act greatly influenced the teacher, who on the one hand was happy that she could accommodate the needs of Martin and teach him reading skills in the way in which he preferred. On the other hand she was nervous about the reaction of the school administration about her deviant teaching skills (Hviid, 2004). The teacher managed to accommodate the needs of Martin and did not (in this particular situation) expect Martin to adapt to the school’s usual teaching procedure. Thus ‘containability’ differs within and between schools depending on the teachers’ judgments and on the values of the school (Andersen, 2004). However it is apparent that the needs of children with certain disorders or disabilities cannot be accommodated for continuously in the way in which the teacher accommodated for Martin’s needs at the public school (Hviid, 2004). ‘Containability’ at the psychological level implies several aspects besides learning such as quality of life, quality of social relations and overall happiness (Hansen, 2005). It is evident that the school situation itself can act as a protective and/or risk factor for future developmental outcome in various aspects of an individual’s life and not solely in the academic arena (Hechtman, 1999). The developmental outcome of a poor school-situation, which implies poor relations (peer rejection) and a poor learning environment, has been associated with school drop out, low SES in adulthood, low self-esteem, anti-social behaviour, depression, delinquency and substance abuse (Barkley, 2000, Coie, 1992, Whalen, 1990). Thus ‘containability’ at the psychological level implies all aspects of the child’s experience at school and not solely his/her learning process. Furthermore psychological research suggests that optimal learning occurs under conditions in which the child is motivated, and this motivation is an end result of a respectful environment in which the child is encouraged to learn what the child is interested in and is given continuous praise for their learning abilities (Wood, 2002). Thus the public school should consider these psychological aspects when evaluating the ‘containability’ of the public school.
It is evident that there are various ways in which one can conceptualise about ‘containability’ of the public school. It is emphasised that the conceptualisation of ‘containability’ of the public school at the political and educational level, does not pay dividends to some children and adolescents with ADHD. Moreover when the interviewees report on their experience at the public school it is not solely the academic environment, which is of greatest importance, but the children’s social and personal experience at the school as well. If politicians and teachers neglect or minimize the importance of these significant areas of a child’s experience, then the quality of life of this group is ignored and this can indeed have detrimental effects on developmental outcome (Hechtman, 1999). It is apparent that the school experience of children with ADHD is important and does greatly influence the quality of life of this group (and any other group for that matter). The findings of study II suggest that the experience at the public school has been poor in the majority cases with regards to the social and personal realm in particular. Prior to a discussion of the practical implications of study II, let us turn to the methodological limitations and future empirical improvements.

Methodological limitations and future improvements of study II

The methodological limitations of study II involve the sample, procedure and the technique applied in collecting the data. Firstly the sample is very small and the sampling is constrained to availability (those who responded to the advertisement). Secondly the criterion of participation was that the child had attended a public school and was currently attending a special education school. In hindsight the researcher regrets this inclusion criterion, due to the fact that the inclusion of children with ADHD attending a public school could have illuminated further variables, which are influential in a positive and/or negative school experience. With regards to the procedure the researcher found that the simultaneous interviewing of the parent(s) and the children/adolescents could have biased the results as the following extract implies: ‘Yeah I think that …Thomas would be more open if I wasn’t sitting here’ (Interview I, line 219-220). The procedure was applied due to the fact that research has found that adults can provide valuable information concerning the child’s behaviour and experience (Grills, 2002, Phares, 1997). However research has furthermore found that there is great little agreement between child-parent reporting, which is indeed evident across the interviews (Grills, 2002). How to solve this dilemma is difficult to tell, but the simultaneous interviewing does seem to be inexpedient and does seem to have an impact on the findings. The technique applied also suffers methodological problems such as the researchers interviewing skills and the researchers subjective stand point. The researcher admits that the interaction and communication with children lacks training and experience and this might have prevented the collection of important data. The subjectivity of the researcher is also apparent across the interviews and could have biased the results. The author must admit that she had a preconceived conception (based on the results of previous research) that children and adolescents experience social and personal defeats at the public school and thus the researcher’s subjective attitude was that the special education school could (hopefully) accommodate for this group of children. This preconception could indeed have biased the results (Silverman, 2005). The generalizability suffers methodological limitations as well in that the sample was not pure ADHD sample, but ADHD with several comorbid disorders. Thus the results cannot be properly generalized to a pure ADHD population.
Future improvements thus call for an increase in sample size, which is not solely opportunity based. Furthermore it calls for the inclusion of children with ADHD attending a public school, so that more information can be provided regarding influential factors on poor/positive school experiences. This could also provide a more thorough picture of the ability and/or disability of the public school to ‘contain’ this group of children. Thirdly it is important that future research accounts for the comorbidity of the participants firstly to identify the impact of this comorbidity and to improve the generalizability of the findings. Last but not least it calls for the application of a trained interviewer, who is blind to the study (if that is possible in qualitative research?). So it seems that there are several points to consider in future research regarding this area. But what are the practical implications of study II?

**Practical implications**

The findings of study II first of all suggest that guidelines should be developed and should be followed by social workers regarding the educational placement of a given child with ADHD. This guideline cannot be developed solely on the basis of this study, but the guideline should incorporate the consideration of the ‘whole’ child and the educational placement should not be in the hands of a given social worker and should not depend on a given county’s availabilities (or lack of). The school situation should be a positive experience for the child in all aspects of the child’s life, because a poor school experience can have detrimental effects on the developmental outcome (Hechtman, 1999). This might imply that the opening of more special education schools is the first priority on the political agenda. Secondly the author argues that the political conception of ‘containability’ of the public school should be altered and should include social and personal aspects of the child and not solely academic aspects. It is evident that the interviewees were not successfully contained at the public school, but this could be an artefact of the methodological procedure: The interviewees were attending a special education school, because the public school was not able to ‘contain’ them. But how can the ‘containability’ of the public school be improved? It could be improved both at the political and educational level. The teachers’ curriculum should incorporate the teaching of special population children, so the teacher feels competent in accommodating for this particular group (Andersen, 2004). At a political and educational level it is recommended that: ‘Properly trained instructors should discuss topics on ADHD with the pupils in the classroom as part of their regular curriculum and teachers should undergo continuing education on subjects, such as ADHD, which may be considered a neurological condition and not a lack of motivation by these handicapped individuals. Teachers should set a good example by treating these pupils with patience and consideration. The compassion of their peers, as well as encouragement by their teacher, will decrease the potential risk of these individuals dropping out of school (Brook, 2001, pp. 36)’. Furthermore it is greatly recommended that ‘school and health authorities should play a part in enabling these children and adolescents, diagnosed with ADHD, to achieve successful education, to experience regular social interaction and to regain self-esteem (Brook, 2001, pp. 36).

Thus it is not known (yet), which practical implications should be put into practice and it is probably neither or. Political and social changes (more special education schools and an expansion of the ‘containability’ of the public school) could be practiced. And a proper understanding of the interaction between various child and school characteristics and subsequent outcomes will determine the content of an empirical evidence based educational placement guideline. The author
suspects (which is supported by the data) that there are indeed individual differences among children and adolescents, which determines the appropriateness of a given school and these should be considered. It is not a question whether children and adolescents benefit from a special education school or a public school. It is a question of ‘which characteristics of the child and the school produce a positive school experience’? And how can these best be put into practice? Last but not least it is a question about what a particular child perceives as important in having a positive school experience and accommodating for these needs and wishes. Thus decisions regarding educational placements should be tailored according to the child’s needs.

**Integrating the findings of study I and II**

The findings of study I found that children and adolescents with ADHD did not significantly perceive themselves differently than controls and did not have significantly lower self-esteem. This finding refutes previous findings and refutes (to an extent) the demoralization theory of ADHD and depression. Furthermore study I found that this was positively correlated with years of attendance at the special education school. Thus there seems to be factors at the school, which prosper positive self-perception. It could be the nature of the social comparison group, which influenced these scores (Harter, 1985), but it could also be other factors, which study II aimed at identifying. The findings of study II suggest that there are characteristics of the child, which interact in a bi-directional manner with school characteristics in order to determine the quality of the school experience for a child and adolescent with ADHD. These overall findings suggest that any outcome is influenced by the additive effect of various parameters (moderators) and by various systems (Bronfennbrenner, 1979, Grant, 2003, Loeber, 1991). It seems that a positive relation with peers and teachers and positive response to medication and the absence of comorbid conditions heightens the probability of a positive school experience (Grant, 2003). The quality of the school experience influences the parent-child interaction and the overall quality of life of the child and it is of utmost importance that these children (and other populations) have a positive experience at school with regards to academic, social and personal spheres. If the quality of the school experience is poor it heightens the risk of poor developmental outcomes (Grant, 2003). School experience is indeed a great part of any child’s life and it is of utmost importance that the child’s needs are considered in the school setting. The findings of the two studies call for practical implications at the socio-political, educational and psychological level. However future research will determine the exact nature of these practical implications.

**Where to go from here?**

Throughout this paper the reader has experienced the complexity of all aspects of ADHD and has acknowledged the need for grand research efforts within all areas of ADHD. The reader has furthermore experienced how the symptomatology can impair a child and/or adolescent across various domains and how different factors at all levels impacts on the developmental outcome of this group. It is no secret that the social costs of poor developmental outcomes are high, but it is no secret either that ADHD can have detrimental personal costs, which is of greater importance. It is evident that ADHD cannot be cured and thus it is vital to accommodate for this group the best way possible across various settings and contexts. It is of utmost importance that significant others,
teachers, clinicians, politicians and research bodies recognize and acknowledge the U.N
convention's statements on the Rights of the Child § 23 (U.N. General Assembly, 1989):

‘States Parties recognize that a mentally or physically disabled child enjoy a full and decent life, in
conditions which ensure dignity, promote self-reliance and facilitate the child’s active participation
in the community’

The hope of this paper was to improve the conditions of children and adolescents with ADHD and
to improve their quality of life. And the author sincerely encourages research bodies, politicians,
teachers and clinicians to support and practise this pursuit.

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