Identifying Patterns of Emotional and Behavioural Problems in Preschool children - Facilitating Early Detection

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Linköping 2019

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Dedicated to my family,
to all preschool children
and especially to the preschool
child closest my heart, Gillis.

*Grant me the serenity to accept the things I cannot change.
Courage to change the things I can.
And the wisdom to know the difference.*

Reinhold Niebuhr

Keywords.

behavioural problems – emotional distress – longitudinal study – mental health – preschool children – risk indicators – statistical modelling – strengths and difficulties questionnaire

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ABSTRACT

Mental health problems often debut in early childhood and may last throughout adulthood, thereby making early detection and intervention especially important. The overarching aim of the present thesis was to identify patterns of emotional and behavioural problems indicating mental health problems in preschool children. To facilitate the detection of such problems early on, one available screening instrument Strengths and Difficulties Questionnaire (SDQ), was validated. The development and interaction of externalising problems in preschool children were studied over time. Functioning and behaviour and their relations to protective and risk indicators in both environmental and personal characteristics were explored. The long-term goal was to increase knowledge about early identification of emotional and behavioural problems in preschool children in order to facilitate early intervention.

In Study I (n=690), the subscales Hyperactivity and Conduct Problems were shown to be valid for children in the age group 1–3 years. A reasonable level of validity was found for the age group 4–5 years when using the original SDQ four-factor solution. The preschool teachers considered most of the SDQ items relevant and possible to rate. Based on the results of Study II (n=815), a score of ≥ 12 on the SDQ Total Problems Scale is recommended as a cut-off for Swedish preschool children. There were significant differences between boys and girls on all subscales except for the Emotional subscale. The Swedish norms for SDQ are to a large extent similar to findings from other European countries. Study III (n=195) showed that preschool children's conduct problems decrease over time. Children exhibiting more initial hyperactivity (at year 1) have less reduction in conduct problems over time, i.e. the more hyperactivity early in life, the more conduct problems at year 3. In Study IV (n=197), children high in engagement and social interaction function well over time, even in the presence of hyperactivity, while children with low engagement and interaction alone or in combination with hyperactivity and conduct problems continue to have problems. Stability was related to the existence of a larger number of protective or risk indicators respectively.

Taken together, this thesis has shown that the SDQ can be used to identify preschool children at risk of developing mental health problems later in life.

SVENSK SAMMANFATTNING

Psykisk ohälsa debuterar ofta i tidig barndom och kan kvarstå upp i vuxen ålder, därför är tidig upptäckt av psykisk ohälsa viktig för att kunna minska mänskligt lidande.

Övergripande syfte med denna avhandling var att fylla kunskapsluckor vad gäller att identifiera mönster av internaliserande och externaliserande problem som kunde påvisa psykisk ohälsa hos förskolebarn i Sverige. För att möjliggöra tidig upptäckt har screeningsinstrumentet Strengths and Difficulties Questionnaire (SDQ) validerats för förskolebarn. SDQ är ett välkänt frågeformulär för skolbarn, utvecklat i England och det mäter förekomst av internaliserande och externaliserande problem. Svaren kan delas upp i fem delskalor: Emotionella problem, Beteendeproblem, Hyperaktivitet, Kamratproblem och Prosocialt beteende. Det långsiktiga målet med avhandlingens delstudier var att utvidga kunskapen om tidig upptäckt av psykisk ohälsa bland förskolebarn för att genom tidig upptäckt kunna möjliggöra tidig intervention till barn, familj och i förskolan.

I studie I (n=690) visade sig SDQ delskalorna Beteendeproblem och Hyperaktivitet godtagbara (valida) för barnen i åldern 1–3 år. I åldern 4–5 år var alla delskalor som mäter problem godtagbara. Förskollärare bedömde att de flesta av SDQ frågorna var relevanta och möjliga att svara på även för förskolebarn. I studie II (n=815) rekommenderas baserat på fynden en svensk cut-off för förskolebarn för SDQ helskala (≥ 12 problempoäng) samt för respektive delskala. Det fanns signifikanta skillnader mellan pojkar och flickor i samtliga delskalor utom för Emotionella problem. Den svenska normen för SDQ liknar till största del övriga Europa. Utvecklingen av internaliserande och externaliserande problem över tid studerades också. I studie III (n=195) visades att förskolebarnens beteendeproblem minskade med ökad ålder. Barn som även uppvisade hyperaktivitet första året hade inte lika markant minskning av beteendeproblem över tid. Mera hyperaktivitet tidigt i livet ökar alltså risken för mer beteendeproblem tre år senare. I Studie IV (n=197) studerades förskolebarnens funktion och beteende över tre år i relation till skydds- och riskindikatorer. Förskolebarn med högt engagemang och gott socialt samspel visade en god funktion i förskolan, även om de samtidigt uppvisade hyperaktivitet. Förskolebarn som uppvisade lågt engagemang och sämre socialt samspel, enbart eller i kombination med hyperaktivitet och beteendeproblem, hade även ökad andel av andra problem. Stabilitet i funktion var relaterat till stort antal skydds- eller riskindikatorer i personliga karakteristika eller i barnets miljö.

Sammantaget har denna avhandling visat att frågeformuläret SDQ kan användas för att identifiera förskolebarn med internaliserande och externaliserande problem. Dessa barn är viktiga att upptäcka då de även löper högre risk att utveckla psykisk sjukdom senare i livet.

LIST OF PAPERS

- I. Gustafsson, B. M., Gustafsson, P. A., Proczkowska-Björklund, M. (2016). The Strengths and Difficulties Questionnaire (SDQ) for preschool children—a Swedish validation. *Nordic Journal of Psychiatry*, 70:8, 567-574 doi:10.1080/08039488.2016.1184309
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- III. Gustafsson, B. M., Danielsson, H., Granlund, M., Gustafsson, P. A. & Proczkowska, M. (2018). Hyperactivity precedes conduct problems in preschool children: a longitudinal study, *BJPsych Open*, 22(4), 186-191 doi: 10.1192/bjo.2018.20
- IV. Gustafsson, B.M., Gustafsson, P.A., Granlund, M., Proczkowska, M., Almqvist, L. (Submitted) Longitudinal pathways of engagement, interaction, hyperactivity and conduct problems in preschool children.

ABBREVIATIONS

ADHD	Attention Deficit Hyperactivity Disorder
ASD	Autism Spectrum Disorder
CAP	Child and Adolescent Psychiatry
CBCL	Child Behaviour Checklist
CD	Conduct Disorder
CEQ	Children's Engagement Questionnaire
CFI	Comparative Fit Index
CHC	Child Healthcare
CHN	Child Health Nurse
C-TRF	Child-Teacher Report Form
ESSENCE	Early Symptomatic Syndromes Eliciting Neuro-developmental Clinical Examinations
ICF-CY	International Classification of Functioning, Disability and Health: Children and Youth Version
LGM	Latent Growth Modelling
ODD	Oppositional Defiant Disorder
PCA	Principal Component Analysis
PPCT	Person-Process-Context-Time
PTSD	Post-Traumatic Stress Disorder
RMSEA	Root Mean Squared Error Approximation Index
SDQ	Strengths and Difficulties Questionnaire
TLI	Tuker–Lewis Index
TUTI	Early Detection – Early Intervention (Tidig Upptäckt – Tidiga Insatser)
WHO	World Health Organization

PERSONAL PREFACE

There is a personal background to this dissertation, because in my previous work both as a District Nurse in Primary Healthcare and as a Child Health Nurse (CHN) in Child Healthcare (CHC), I was often struck by how many already-known personal and/or environmental risk indicators a newborn or small child could have. There were not nearly enough interventions offered to the children, their parents or their preschools. In my experience, all the available actors “saved” on their resources until the child showed definite symptoms of mental ill health, and only then were they prepared to invest in interventions to reduce the suffering of both child and parents. I experienced the positive value of being able to collaborate with the child’s parents and preschool in early interventions. Later on, as a school nurse in the Swedish schools healthcare system, I had a similar experience. These systems have a responsibility to promote, prevent and support the children’s progress towards the school’s goals, but they are not responsible for treatment (National Board of Health and Welfare, 2016). In practice, this can lead to a long waiting time for school children with mental health problems before they receive help from specialists in healthcare, and meanwhile mental health problems can increase.

Later, while working at the Child and Adolescent Psychiatry Department (CAP), I came into contact with several children whom I had already identified as exhibiting risk factors during my earlier employment. That made me even more interested in investigating the possibility of detection and intervention for mental health problems in young children. Having the clinical know-how and being aware of the indicators of risk for psychological health problems was not sufficient in lieu of the possibility of offering the children, families, preschool and school staff enough interventions. The question of early detection and early intervention regarding mental health problems is a complex matter and ultimately requires unified political decisions and community efforts based on science. I wanted to study the detection of mental health problems in preschool children using evidence-based, clinical knowledge along with structured screening in order to enable interventions for preschool children and their parents.

INTRODUCTION

Background to the Thesis

The mental health of children has been a focus of attention in society over the past few decades. Statistics also show that during this period the number of children reported as having mental health problems has increased in Swedish school children (Gustafsson et al., 2010; National Board of Health and Welfare, 2012; OECD, 2013). Mental health problems can be described as psychological symptoms that inhibit the individual's emotional wellbeing, optimal development, positive behaviour and participation in everyday functioning due to genetics or environmental context (European Commission, 2005). One of the central questions in this dissertation is: "What symptoms of mental health problems do preschool children exhibit and what can we detect early on?"

Studies have shown that children with externalising (Kling, Forste, Sundell & Melin, 2010) and / or internalising behavioural problems (Kendler, Gatz, Gardner & Pederson, 2006) are at increased risk for future mental illness (Caspi, Moffitt, Newman & Silva, 1998). The earlier behavioural problems occur in the child's life, the greater the risk (Egger & Angold, 2006; Kling et al., 2010). Therefore, early interventions for these children are important (Kazdin, 2008). Several Swedish reports (Bondestam, Hansson, Kadesjö & Zetter-quist, 2013; Gustafsson & Hansson, 2013; Petersen et al., 2010; SOU, 1998:31) have highlighted a dire need for research into the mental health area, not least concerning children of preschool age. There is currently a lack of knowledge as to how many Swedish children of preschool age have significant behavioural problems. Inherent to this is the question of whether any, or how many, of these children have been offered and/or are receiving any kind of behaviour-related intervention, and how problems begin and continue to develop in children who receive or not receive support. It has been established that children already displaying clear signs of psychological problems at preschool age often develop mental health problems, either corresponding to or overlapping the original symptoms, later in life (Gillberg, 2010; Hofstra, Van Der Ende & Verhulst, 2002; Wille, Bettge, Wittchen & Ravens-Sieberer, 2008). Efforts made to strengthen overall mental health in preschool children appear to lead to positive effects later in life (Gillberg, 2010; Lavigne et al., 1998). By identifying children showing signs of problems at an early stage, there is an increased likelihood that adequate support can be offered (Dodge et al., 2014; Gillberg, 2010).

Epidemiological knowledge, along with studies into the respective risk and protective indicators for mental health in preschool children are needed. There is a lack of generally-accepted methods to identify mental health problems in younger children, and there is a need for a structured, reliable screening method for early detection. There is also a need to develop and/or implement methods that could support children experiencing regulatory difficulties or mental health problems to enable them to achieve a more positive functioning and development (Bondestam et al., 2013; Gustafsson & Hansson, 2013; Petersen et al., 2010; SOU, 1998:31). One predictor of positive mental health in young children seems to be their involvement in everyday activities and engagement (Raspa, McWilliam & Maher Ridley, 2001).

Preschools have been highlighted as an environment in which children's mental health problems can be identified and where good mental health can be promoted (Almqvist, 2006). Health promotion and preventive work should aim to increase children's active involvement in their everyday life by promoting protective factors and reducing risk factors. A preschool with adequate resources is suitable for this kind of work. Society as a whole also needs to take measures in the form of social policy to ensure that it is easier for families to "live a good life", maintain a satisfactory standard of living and feel they are capable of managing their daily lives. Nobel prize-winner in economics, Heckman (2006), found evidence to suggest that early prevention and interventions for preschool children may lead to favourable long-term effects for the children and that such interventions proved to be economically justifiable. The main purpose of health-promotion and intervention work with young children is to provide learning opportunities and to increase their social, cognitive and adaptive skills during the period of maximal brain plasticity (Fox, Levitt & Nelson, 2010; Futures, 2008).

In 2012, based on pre-established knowledge gaps, the National Board of Health and Welfare took the initiative to start the project, Early Detection – Early Intervention (in Swedish Tidig Upptäckt – Tidig Intervention, TUTI), this dissertation is a part of that project (Granlund et al., 2016). The purposes of the TUTI study were: to evaluate the screening of mental health among preschool children, to describe patterns and pathways of behavioural problems and to investigate the utility of engagement, social interaction and prosocial behaviour as expressions of mental health. Furthermore, there were aims to increase the level of knowledge of as to how the development of children's behavioural problems over time is influenced by general risk and protection factors (preschool factors, family factors and home-to-school collaboration).

Development and Functioning in Preschool Children

Since children develop and change considerably during their preschool years and therefore attention to signs and symptoms must be guided by knowledge of normal development, an overview of child development and a brief description of mental health problems in young children are given here.

The behaviour of the child changes with maturity, often described as age-related developmental changes. Children at any age have central “developmental tasks to solve”, in motor skills, language, self-esteem and how to handle emotional regulation. These tasks also support children’s functioning in everyday life, independent of age. Throughout life, there are also critical developmental periods related to both changes in maturity and life roles that the individual has to manage. All of this occurs with the help of adults and under the influence of heritage and environment (Erikson, 1977; Hensch, 2004; Phillips & Shonkoff, 2000).

One important issue in the promotion of early intervention is to know what is regarded as typical for a particular age in order to detect any developmental delays or behavioural problems (Berk, 2013). The child’s functioning is always contextual and thus varies substantially within a typical norm or due to the demands for functioning in the child’s natural context. Among preschool children, one aspect of functioning focuses on functioning in everyday life activities, e.g. preschool, and the skills used by the child (Hebbeler & Rooney, 2009; Kjellmer, Hedvall, Fernell, Gillberg & Norrelgen, 2012). Other related definitions of everyday functioning include: functional performance, functional skills, functional status, and adaptive behaviour (Case-Smith, 1995; Maggi, Magalhães, Campos & Bouzada, 2014; Msall & Tremont, 2002).

In young children, it can prove difficult to distinguish behaviour that is simply a typical variation in functioning from something that is a deviance in mental health or development (WHO, 2009). Therefore it is important to develop tools that can describe a child’s functioning in real life as a means of guiding treatment planning (Castro & Pinto, 2013).

Before beginning preschool, functioning and development in the child is primarily dependent on input from parents, other family members and the child’s home environment, together with their inherent traits. Attachment has hitherto been primarily between the child and her or his parents. Transition to preschool can be a shift in feelings, behaviours and thoughts that younger children can find difficult to handle. New relationships with adults and other children are formed. Here, preschool teachers

are added to the child's sphere of potential attachment figures (Weinfield, Sroufe, Egeland & Carlson, 1999).

A child's development and functioning can be defined as time-related changes brought about as a result of biological, contextual and environmental conditions (Conger & Donnellan, 2007; Rutter, Moffitt & Caspi, 2006). The core of the developmental process is transformation; something new appears. Thus, the simple becomes complex or a basic skill becomes advanced (Overton, 2006). Development can be normal or abnormal, typical or atypical (Karmiloff Smith, 2007), the division being complex. This in turn can affect the child's everyday functioning (e.g. getting dressed, playing, interacting with peers etc.) (Andersson, Martin, Brodd & Almqvist, 2016; Fuhs, Farran & Nesbitt, 2013).

A key issue in mental health for young children is self-regulation, which is a multi-level construct that describes the ability of an individual to optimally manage physiological arousal, emotions, attention, behaviour and cognition. Self-regulation guides the activities, increases autonomy and helps the child to acquire the behavioural, emotional and cognitive self-control that is essential for competent functioning, both in childhood and throughout the lifespan (Blair & Diamond, 2008; Phillips & Shonkoff, 2000). Interactions among preschool children are important situations for the development of cognitive regulation and coping skills, and play a part in handling the demanding experiences in life (Bornstein & Sameroff, 2009; Korucu, Selcuk & Harma, 2017; Rutter, 2012; Shonkoff et al., 2015).

Motor development reflects different aspects of development, including perception, planning and motivation. Whilst physical development, along with that of perception, motor skills and how (well) the body functions are important to this thesis, they are not central to it. The development of motor skills and bodily functions reflect the child's level of perception, planning and motivation and, taken together, these are all important for the psychological development of the child (Andersson et al., 2016; Wilson & Knoblich, 2005; Von Hofsten, 2004).

Genes are crucial for human development. This genetic foundation has been constantly evolving throughout the history of mankind. In symbiosis with the environment, it contributes to physical, perceptual, cognitive, behavioural and social development (Rutter et al., 2006). Whilst sex is determined by our genes, gender is influenced by stereotypes, as well as the social and cultural environment. Gender differences can be observed in a number of different areas of the child's development (Martin & Ruble, 2010).

The brain is the centre of emotion, cognition, learning etc., and much research focuses on how the brain performs these functions (Berk, 2013;

Johnson, Halit, Grice & Karmiloff-Smith, 2002; Loye, 2002). The newborn's brain is already geared towards learning and development, directed by the genes in interaction with the environment (Casey, Tottenham, Liston & Durston, 2005; Lewis, 2005; McCrory, De Brito & Viding, 2010). The brain is dependent on stimulus in order to develop; children subjected to lack of care or early institutionalisation tend to display less developed brains compared to those who have experienced normal growth conditions (Belsky & de Haan, 2011). The brain is in its most plastic state early in life, due to the overproduction of nerve connections and the fact that functional distribution in the brain is not yet organised (Fox et al., 2010; Johnson et al., 2002; Taylor & Alden, 1997). This is one major reason why early action should be taken in those cases where children display developmental deviations or where it is possible to detect weaknesses in the environment (Cicchetti, 2002; Futures, 2008; Grossman et al., 2003).

The human brain is largely adapted for human interaction (Geary, 2005), which is practiced by the child in interaction with peers, something that in modern Western societies takes place to a great extent in the preschool group. The development of mentalisation is an important factor for social interaction and has to do with understanding the thoughts, feelings and actions of other people (Moll & Tomasello, 2006). Two general characteristics of well-developed emotion regulation processes are that emotion-generating/processing regions in the limbic system (amygdala, insula) are activated by negative emotional stimuli, and that this neural response is dampened/regulated by prefrontal emotion regulatory regions (Wilcox, Pommy & Adinoff, 2016).

Cognitive development describes the child's mental processes that deal with knowledge, thinking, problem-solving and storing information and experiences (Goswami & Bryant, 2007). Cognitive development allows for thinking to become increasingly complex and abstract and it is possible for the child to be at different levels of cognitive development in different areas (Piaget, Henriques & Ascher, 2013). As a part of cognition, memory develops and changes during growth, affecting functions such as recognition, communication and learning (Nelson, 2007). In order to attain good social functioning, the child's development in the areas of communication and language also plays an important role (Dahlgren, Sandberg & Hjelmquist, 2003; Trevarthen, 1979). Early dialogue largely takes place during play and in everyday situations, and adults help children to solve communicative tasks (Bruner, 1975). Lack of communication skills is very closely linked to difficulties in behaviour, self-regulation and temperament (Prior, Bavin, Cini, Eadie & Reilly, 2011).

The child's emotional development involves expression, understanding, experience, bodily reaction, direction, action and regulation of the emotions (joy, sadness, fear, anger, pride, shame, guilty and envy) (Izard, 2009; Kagan, 2007). Well-developed emotional regulation is important for the child's functioning (Campos, Walle, Dahl & Main, 2011). Emotional regulation problems tend to lead to either over- or under-expression in the form of internalising problems, resulting in shyness and reluctance, or to externalising problems, with aggression, outbreak and anti-social behaviour as a result (Mullin & Hinshaw, 2007; Nigg, 2000; Nordberg, Rydelius & Zetterström, 1991; Nærde, Ogden, Janson & Zachrisson, 2014). Within the field of developmental psychology, emotional regulation as well as empathic problems are especially associated with behavioural difficulties. In time, emotional regulation problems can result in major negative effects on relationships with both children and adults alike (Cecil, McCrory, Barker, Guiney & Viding, 2018; Robins, 1966; Valiente et al., 2004).

A child's character or temperament affects how they are treated by the people in their surroundings. While there are a number of different descriptions, one such classification divides temperament into the categories of easy, difficult and difficult to warm up (Thomas & Chess, 1977). Most research describes temperament as a biological foundation formed through differences in nervous-system reactivity and investigates how different areas and networks in the brain provide sensory colouration of incoming stimuli. These are developed through environmental impact, although siblings often have different temperaments (Saudino, 2009; Zentner & Bates, 2008). Temperament also develops with age, with the greatest changes taking place between the ages of 3 and 5, after which the child's self-control and ability to adapt are improved, even though there is a continuation of development after this point (Asendorpf, Denissen & van Aken, 2008). However, similar kinds of temperament still have the propensity to result in different developmental processes (Kagan & Snidman, 2009) and it is worth noting that different types of temperaments are not inherently good or bad; rather, the child's temperament may fit better or worse with those of others, seemingly irrespective of the age of the other person (Thomas & Chess, 1977). Parents' style of caring is in turn influenced by the child's temperament (Belsky, Bakermans-Kranenburg & Van IJzendoorn, 2007).

The child's attachment to the mother, who is viewed as being the nearest associate to the child, provides security, comfort and protection in a situation of durable and "irreplaceable" proximity, and is the basis for the development of personality and mental health. The child's type of attachment will affect how he or she functions in senior relationships (Bowlby, Ainsworth & Fry, 1965). Parent "bonding" serves to provide a safe base

from which the child can explore the world, as well as a safe haven when experiencing threat (Bowlby, 2012; Marvin, Cooper, Hoffman & Powell, 2002). The child's attachment pattern affects relationships in preschool. The young preschool child also needs to develop a secure attachment relationship, preferably with first one and then a few additional preschool teachers (Weinfield et al., 1999). As the child's cognitive ability develops, representations of the self and relationships with other people are created, a so-called "internal working model" whereby the child develops the ability to predict the possible consequences of different actions on their part (Bretherton & Munholland, 2008; Craik, 1967).

Developmental abnormalities could manifest as the child not following the expected rate or path of development; i.e. is slower than, or different from, other children of a similar age (Thomas, Cotton, Pan & Ratliff-Schaub, 2012). There are different degrees of overlap between developmental deviations and behavioural problems, emotional problems and other signs of mental health issues. In order to identify possible dysfunction, an investigation that simultaneously addresses several indicators associated with functioning is needed (Hatakenaka & Hirano, 2015; Sameroff, Seifer, Barocas, Zax & Greenspan, 1987; Wille, Bettge, Ravens-Sieberer & BELLA Study Group, 2008). It has been suggested that it may indeed be the cumulative impact of several risk and protective indicators working together, rather than any single factor, which best predicts functioning and development (Sameroff et al., 1987). Such factors include: the child's gender, developmental delay, emotional regulation, prosocial strength, engagement and peer relations, all of which are affected by the simultaneous combination of inheritance and environment. Since the great majority of Swedish children attend preschool, the processes described above take place to a great extent in the preschool environment in interaction with peers and preschool staff. Thus, there is a possibility for preschools to both identify children with troubling behaviour and offer supportive intervention.

Children's Mental Health

In the original definition of 1948, the World Health Organization (WHO) declared "Health is a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity" (WHO, 2018a).

The WHO (2018a) key facts of Mental health:

Mental health is more than the absence of mental disorders. Mental health is an integral part of health; indeed, there is no health without mental health. Mental health is determined by a range of socioeconomic, biological

and environmental factors ... Mental health is a state of wellbeing in which an individual realizes his or her own abilities, can cope with the normal stresses of life ... Mental health is fundamental to our collective and individual ability as humans to think, emote, interact with each other, earn a living and enjoy life.

Mental health can also be defined as emotional wellbeing in terms of feeling happiness and satisfaction in one's life. Furthermore, one can focus on positive, individual functioning which can manifest itself in engagement or in terms of self-realisation, that is, psychological well being. Positive societal functioning in terms of being of social value, such as social interactions, are highlighted in the social wellbeing view of mental health (Aydogan, 2012; Westerhof & Keyes, 2010; WHO, 2018a).

Another way of describing health can be found in the WHO Interactive Health Model, which is a system of classification for children, the International Classification of Functioning, Disability and Health: Children and Youth Version (ICF-CY) (WHO, 2007). The object of the classification is to supply a common understanding of health and human functioning that is specific to the development and growth of children in various life situations. The Interactive Model (Figure 1) illustrates the complex relationships between two parts; firstly, functioning and disability, including body functions (i.e., physiological and mental functions of the body system), body structures (i.e., anatomical parts of the body), activities (i.e., execution of tasks), and participation (i.e., involvement in life situations). The second part, contextual factors, consists of environmental factors (i.e., family, preschool, recreational opportunity, laws, and societal attitudes) and personal factors (i.e., personal experience, religion, gender, age and coping styles) (WHO, 2001a). This model exemplifies the complex interactions between the different dimensions that affect the health of the child, such as environment, the child's age or stage of development. Understanding these environmental factors provides the basis for the possible adaptation of specific factors in order to improve the outcome for the preschool child's functioning.

Research has also linked psychosocial and mental functioning to the ICF-CY (Augustine, Lygnegård, Granlund & Adolfsson, 2018) and also the standardised assessment of functioning in Attention Deficit Hyperactivity Disorder (ADHD) and Autism Spectrum Disorder (ASD) on the ICF-CY Core sets (Bölte et al., 2018a; Bölte et al., 2018b). Under these diagnoses, functional problems are often the reason for the initial referral to mental health specialist services and an important focus for the diagnostic setting, identifying real-life challenges and guiding treatment planning (Castro & Pinto, 2013). In this thesis, the ICF-CY is partially used as a set of variables to describe developmental delay in terms of health predictors.

Health is thus viewed as a concept which is essentially positive and a resource which is abundant in everyday life. The emphasis here is on the abilities and capacities of the individual at the social, personal resources and physical levels. Mental health is a complex condition that is influenced by many factors. In this thesis, mental health among young children is described in terms of health predictors, such as the child's level of engagement, social interaction and everyday functioning.

Figure 1. Interactions Between Components of Children's Health in the ICF-CY Model (WHO, 2007).

Engagement and Social Interaction as Indicators of Mental Health

Engagement can be described in terms of the extent to which the pre-school child is actively involved in daily activities, such as playing and learning activities, either by themselves or in social interaction with adults or other children (McWilliam, Bailey, Bailey & Wolery, 1992). Engagement can be described multidimensionally in terms of the child's behaviour, emotions and cognitive functioning (Fredricks, Blumenfeld & Paris, 2004; Skinner, Kindermann & Furrer, 2009). There are different grades of engagement; low engagement is seen in a child who is not interested in anything specific, whereas a highly engaged child is completing an activity or is involved in engaged symbolic play (Aguiar & McWilliam, 2013). For older children, engagement in school activities may actually represent a possible antidote to declining academic achievement and motivation as it is thought to be something which can be easily shaped according to context and which nevertheless adapts to shifts in the current environment.

The concept of engagement describes behavioural, emotional and cognitive engagement as a multifaceted construct (Fredricks et al., 2004; Gustafsson et al., 2010; Skinner & Pitzer, 2012).

Among preschool children, engagement is a strong predictor of learning, sociability and mental health (Aydogan, 2012; Raspa et al., 2001), as well as self-regulation and academic success (Fuhs et al., 2013). Children in a preschool context have been reported to say that they feel better when engaged in different activities (Almqvist, 2006). Engagement also affects learning new skills, athletic activities, play and performing complex tasks suitable to the child and their age (Bronfenbrenner & Ceci, 1994; Friedman & Wachs, 1999). Engagement is closely related to proximal processes such as interpersonal interaction, including parent–child, teacher–child and child–child activities, and is associated with more enduring and higher quality interactions (Bronfenbrenner & Evans, 2000; Buhs, Ladd & Herald, 2006; Cadima, Verschueren, Leal & Guedes, 2016; Williford, Maier, Downer, Pianta & Howes, 2013). Interactions with others require an ability to persistently pay attention, which is regarded as a hereditary ability (Casey, McWilliam & Sims, 2012; Pierce-Jordan & Lifter, 2005). The child's interaction with peers of approximately the same age is also important for socialisation and learning (Coolahan, Fantuzzo, Mendez & McDermott, 2000; Luttropp & Granlund, 2010). In this thesis, the engagement and social interaction that take place in preschool are seen as important factors in promoting mental health, learning and development.

Mental Health Problems

The European Commission (2005) states:

Mental ill health includes mental health problems and strain, impaired functioning associated with distress, symptoms, and diagnosable mental disorders ... The mental condition of people is determined by a multiplicity of factors, including biological (genetics, gender), individual (personal experiences), family and social (social support) and economic and environmental (social status and living conditions).

The term mental disorder refers to a condition that constitutes serious impairment in a person's behaviour or cognition. Behavioural problems, certainly in children, may in fact be normal reactions to a stressful life situation. It is important not to attach a diagnosis to something that is normal in life but, on the other hand, early identification of psychiatric conditions may indeed positively affect the prognosis (Bremberg & Dalman, 2015). In addition, psychiatric diagnoses/symptoms do not provide a direct indication of the extent of reduced functioning. They also do not usu-

ally claim to be explanations of the causal mechanisms behind the diagnosis; indeed, the DSM system explicitly declares diagnoses to be of a strictly descriptive nature (American Psychiatric Association, 2013). Several risk factors can work together to contribute the development of mental ill health, ranging from early relational disturbances, through traumatic experiences and psychosocial stressors to organic injuries in combination with genetics and environment (Rutter et al., 2006). In describing the development of psychiatric symptoms/ behavioural symptoms, a model of multi-finality can be useful. The same genetics, environment and context can result in different symptoms. But, on the other hand, there is also equi-finality, whereby the same behavioural symptoms may have several underlying causes or be triggered by any number of different conditions related to the child's genetic traits, environment and context (Cicchetti & Rogosch, 1996). No distinct criteria exist to aid in distinguishing what should be perceived as normal or adequate responses vis-à-vis mental health problems. Rather, there appears to be a continuum between the normal and the abnormal (Gillberg, 2018). Different classification systems exist that set criteria for which subjective and/or objective symptoms need to be manifested for different diagnoses (American Psychiatric Association, 2013; Egger & Emde, 2011; WHO, 2009). Psychiatric symptoms can be described as psychological symptoms that inhibit the individual's emotional wellbeing, optimal development, positive behaviour and/or participation in everyday functioning. Because a complex set of problems is often presented, in young children it is not always rendered clinically relevant to group them according to a diagnostic classification (Gillberg, 2010). In this dissertation, one central question is: "What symptoms of mental health problems do preschool children exhibit and what can we detect early on?"

The Prevalence of Mental Health Problems and Disorders in Children

Mental health problems affect approximately 10–20% of children and adolescents worldwide (Kieling et al., 2011), thereby dominating all chronic conditions. One approximation sets the cost of mental health disease and related problems of all age groups at 3.5% of the gross domestic product (GDP) (WHO, 2018b). The WHO (2018b) has also reported that neuropsychiatric disorders are the leading cause of years lived with disability at a global level (36%) and the third leading cause in Europe (15%). Mental health disorders, both internalising and externalising, often debut in early childhood and last throughout adulthood, thereby making early detection and intervention especially important (Bagner, Rodríguez, Blake, Linares & Carter, 2012; Kieling et al., 2011; Lavigne et al., 1998). For preschool children, the prevalence of emotional and behavioural problems differs

somewhat, with studies producing figures ranging from 12% to 26% (Costello, Egger & Angold, 2005; Earls, 1982; Furniss, Beyer & Guggenmos, 2006; Keenan, Shaw, Walsh, Delliquadri & Giovannelli, 1997; Lavigne et al., 1993). The prevalence of emotional and behavioural problems related to gender takes different values in different studies, but a stable finding is that boys show more externalising problems (Klein, Otto, Fuchs, Zenger & von Klitzing, 2013; Nock, Kazdin, Hiripi & Kessler, 2007; Ravens-Sieberer et al., 2008; Smedje, Broman, Hetta & von Knorring, 1999). However, whilst prevalence rates in preschool children are varied, they are often substantially lower when using set diagnostic criteria, such as: ADHD: 2–8%, Oppositional Defiant Disorder (ODD): 2–7%, Conduct Disorder (CD): 1–3%, Depressive Disorder: 2–3%, Separation Anxiety Disorder (SAD): 2.5% or Generalized Anxiety Disorder (GAD): 2–7%, according to DSM-IV. It is worth noting that few preschool children receive help even when it is recognised that they do indeed have a mental health problem (Egger & Angold, 2006; Gadow, Sprafkin & Nolan, 2001; Thomas, Sanders, Doust, Beller & Glasziou, 2015; Wichstrøm et al., 2012).

Early Symptomatic Syndromes Eliciting Neurodevelopmental Clinical Examinations (ESSENCE)

Gillberg (2010) describes the childhood problems found in neuropsychology and developmental neurology as overlapping and concurrent, in contrast to separate and of an “either/or” nature. The ESSENCE concept assumes comorbidity as an integral feature and states that, among young children, symptoms of different diagnostic criteria appear to be essentially the same (Gillberg et al., 2004). For example, signs indicative of ASD may be recognisable in a 3-year-old child who shows ADHD symptoms at the age of 10. Throughout the child’s development, symptoms can vary and the diagnosis can differ in clarity (Gillberg, 2018). Within the ESSENCE concept, symptoms are used as guidelines, rather than forming the basis for definitive diagnoses. That said, there are certain types of diagnosis which are indeed used under the umbrella of ESSENCE, these being: ADHD, ODD, CD, ASD, Intellectual Disability, Language Disability and Developmental Coordination Disorder. At least 10% of schoolchildren are or have been affected by major ESSENCE symptoms (13% of boys, 7% of girls) (Gillberg, 2018). In girls, these signs are usually not recognised until adolescence or even adulthood (Kopp, Kelly & Gillberg, 2010). However, the fact remains that approximately half of all children included in the ESSENCE category will have been discovered by the age of six, and more than half of this group will have persistent problems in adult life (Gillberg, 2018). At least half of all “chronic” adult psychiatric patients have exhibited ESSENCE symptoms in early childhood (Nylander, Holmqvist, Gustafson & Gillberg, 2009). Young preschool children who show clear signs

of mental health problems often develop symptoms within the same or overlapping areas later in life (Gillberg, 2010). Based on the current state of knowledge, prevention interventions in young children with symptoms included in ESSENCE are needed and preschool would be an appropriate site for this.

Behavioural Problems in Childhood

Behaviour such as social interaction, self-regulation, concentration and speech development among children usually develops positively over time. Therefore, it is difficult to foresee the stability of behavioural problems over time (Larsson, Anckarsater, Råstam, Chang & Lichtenstein, 2012). Behavioural problems are indicators of mental health problems in children, they could be of varying symptom severity, and not necessarily diagnosable mental disorders. They manifest as externalising and internalising problems, influenced by several factors. Important factors when making an assessment of behaviour problems over time include taking account of the quality of parenting as well as the general environment of the child (Gardner & Shaw, 2009). Polarisation into internalising or externalising problems may take a while to become clear (Achenbach & Edelbrock, 1979). There is evidence that prevalence rates of behavioural problems at preschool age persist into adulthood (Bayer, Hastings, Sanson, Ukoumunne & Rubin, 2010; Egger & Angold, 2006). In this thesis, behavioural problems are mostly described as Hyperactivity, Conduct Problems and Emotional problems using the SDQ subscales.

Internalising Problems

Internalising problems are defined as anxiety and depression, or psychosomatic symptoms such as headaches and stomach pain. These are symptoms that children themselves experience as troublesome but are not always able to convey to the adults in their context; they are “internal”. Among preschool children, they are detected as sadness, worry and anxiety and are labelled as emotional problems (American Psychiatric Association, 2013). In this thesis, it has indeed been arduous to identify internalising problems among preschool children because such young children have not yet developed the appropriate verbalisation or cognition skills needed in order to effectively voice their emotions (El-Radhi, 2015). For reasons related to lack of time on the part of preschool teachers, these emotional, silent children can easily be “forgotten” and consequently do not receive the attention they need in order to support their potential in terms of positive development and health (Howes & Ritchie, 2002). Because preschool children with emotional problems do not disturb the day-

to-day workings of the preschool class, their problems tend not to be discovered until later in childhood (Almqvist, Sjöman, Golsäter & Granlund, 2018). Early detection of different emotional disorders and Post-Traumatic Stress Disorder (PTSD) poses inherent and specific challenges (El-Radhi, 2015). There is, however, a body of research that describes preschool children who have been identified and received treatment addressing emotional problems (DeBar, Lynch, Powell & Gale, 2003).

Externalising Problems

This thesis specifically focuses on externalising behaviour issues, such as hyperactivity and conduct problems. Among preschool children, these are rarely serious enough to warrant a diagnosis in accordance with the ICD-10 (WHO, 2007) or DSM-5 (American Psychiatric Association, 2013) classification systems, but it does not necessarily follow that these children do not experience problems in their everyday lives.

Conduct problems among preschool children are most commonly seen when they practise social skills and/or test limits. Such acts of defiance and non-compliance put the child at risk of being rejected by peers and adults. There are a number of indicators signalling an emerging disorder: behaviours are recurrent, become more severe over time or are inappropriate for the child's age. In such a situation, further investigation may be warranted (Buhs et al., 2006; Campbell, Shaw & Gilliom, 2000). Whilst CD/ODD and ADHD in preschool children are associated with a failure to perform well in academic work, this is not yet the case for preschool children who exhibit conduct problems (Metcalf, Harvey & Laws, 2013; Sonuga-Barke, Lamparelli, Stevenson, Thompson & Henry, 1994). Researchers have argued that conduct problems among preschool children are the result of both the child's characteristics and the environment. Hyperactivity is more often seen as a functional impairment (Friedman-Weineth, Harvey, Youngwirth & Goldstein, 2007; Metcalf et al., 2013). ADHD, ODD and CD often have a strong impact on the child's environment and context (WHO, 2001b). In this thesis I have chosen to refer to preschool children with externalising symptoms as children with "problems", not "disorders".

ADHD - Hyperactivity

ADHD is a neurodevelopmental disorder characterised by behaviour incongruent with the developmental stage of the individual preschool child, and it manifests as inattention, impulsivity and hyperactivity, combined with impaired functioning (Daley, Jones, Hutchings & Thompson, 2009). Three subtypes of the disorder are distinguished in the DSM-5 criteria,

these being predominantly hyperactive/impulsive, predominantly inattentive or a combination of the two (ADHD Institute, 2018; American Psychiatric Association, 2013).

The first symptoms to appear are often the hyperactive/impulsive type, and usually manifest themselves at some point between the ages of three and four. Although ADHD symptoms can be difficult to handle, both at home and in preschool, children are usually not introduced to mental health care providers until they begin formal school. Between the ages of five and eight, problems with inattention often escalate, leading to a diagnosis of ADHD (Willcutt et al., 2012). However, this scenario has changed over the past few years. Preschool children have also been increasingly diagnosed with ADHD. A consequence of this has been the more frequent prescription of psychotropic medication (DeBar et al., 2003; Rappley et al., 2002), despite the fact that parenting interventions are recommended as first treatment (Daley et al., 2009; Pelham Jr, Wheeler & Chronis, 1998). Studies have generally suggested that preschool children with symptoms of ADHD experience associated impairment with peer problems, social skills deficits, cognitive problems and motor coordination problems (Gadow & Nolan, 2002; Sonuga-Barke, Auerbach, Campbell, Daley & Thompson, 2005), similar to their school-aged counterparts who have been diagnosed with ADHD. Nolan, Gadow and Sprafkin (2001) point out that different prevalence can be observed between the respective subtypes of ADHD depending upon whether the child is of preschool, elementary school or secondary school age. In their preschool sample, the prevalence of the hyperactive type and combined types of ADHD was found to be almost equally common (6.3% and 7.7% respectively), whilst the inattentive type was less common (prevalence rate = 3.9%). However, the opposite was found to be true in school-age children; i.e. the prevalence of the hyperactive and combined types decreased, while the inattentive type was seen more often. The above corresponds well with other bodies of research as hyperactivity remains the most typical symptom in the ADHD cluster of symptoms detected at preschool age, whilst inattention is often detected later on (Milich, Balentine & Lynam, 2001; Willcutt et al., 2012). Hyperactivity in preschool-age children may not indicate anything more than a minor pathological tendency, but it still serves as a reminder that it may in fact be an early sign of developing mental health problems (Sonuga-Barke et al., 2005).

An extensive spectrum of differential diagnoses related to ADHD can be found, many of these being of a neurological or neuro-developmental nature. Here, we have conditions such as learning disabilities, seizure disorders, ASD, emotional disorder, anxiety disorder, mood disorder and conduct disorder; thyroid abnormalities are also included here. Identical, or at least comparable, symptoms to those found in ADHD may occur as a

result of psychosocial and/or environmental factors and may exist concurrently with an ADHD diagnosis. These comorbid symptoms may be related to circumstances such as a stressful home life, trauma or childhood neglect, for example, and are thus classified as being either primary or secondary to the ADHD diagnosis (Krull, 2016). Certain symptoms of ADHD tend to decline with age. However, up to 65% of children with ADHD symptoms in the age bracket 4–12 years are expected to continue experiencing impairment related to this in adulthood (Faraone, Biederman & Mick, 2006). In other words, ADHD can be a chronic and often lifelong disorder.

Gender plays a part in ADHD, with more boys than girls receiving a diagnosis (Boat & Wu, 2015). It is worth noting, however, that within the diagnosis groups, inattentive type ADHD is more frequently diagnosed in girls (Kopp et al., 2010). This may serve to partly explain why fewer girls receive a diagnosis in the first place: the inattentive type equals less disruption to the immediate surroundings, drawing less attention to the behavioural problems and eventual difficulties that girls experience (Rucklidge, 2010). To date, there has been no clear indication that the incidence of ADHD in school children is variable in relation to ethnic differences. And while it has been stated in US studies that ADHD would appear to be higher among Caucasians compared with African Americans or Hispanic Americans, this may be explained by a lack of clinical identification of non-white children with ADHD (Morgan, Staff, Hillemeier, Farkas & Maczuga, 2013).

Oppositional Defiant Disorder (ODD)

One of the most common behavioural problems among preschoolers is disruptive behaviour (emotional outbursts, physical aggression, excessive argumentativeness, anger, defiance), and this can be seen more intensely and more frequently in ODD than in “typical children”. Boys are more often afflicted (Nock et al., 2007). Other psychiatric conditions, such as emotional and externalising disorders, are associated with ODD in youth (Whelan, Stringaris, Maughan & Barker, 2013). ODD is often expressed in the form of the child being irritable, defiant, openly hostile, negativistic and uncooperative. Due to the pattern of behaviour associated with ODD, these oppositional actions may negatively impact upon relationships at home, in school and in the wider society (Ogundele, 2018). There is an ongoing discussion about whether ODD and CD are different entities or

whether ODD is a forerunner of CD, which in turn may lead to Antisocial Personality Disorder.

Conduct Disorder (CD)

Characteristic behaviours which are inherent to CD are the breaking of rules in a way which is inappropriate for the physical age of the individual, often coupled with a blatant disregard for the fundamental rights of others in the vicinity. Further symptoms are: contentious behaviour, acts of malice against persons, deceitfulness, a disproportionate amount of conflict, even physical, or bullying, and intentional physical harm (Campbell et al., 2000). Children with CD tend to experience a range of negative emotions such as frustration, sadness and anxiety as part of their difficulties with language and in relationships. Their ability to understand other people's thoughts, feelings and actions, and not least empathy, is often somewhat diminished. The degree to which the exhibited behaviour can be classified as antisocial is the major distinction between ODD and CD (Ogundele, 2018). Young children diagnosed with CD are more likely to have significantly increased mental health problems in adulthood (NICE, 2018). Should the individual not receive treatment for CD, the likelihood of disorder-related difficulties in adulthood in the form of Substance Use Disorder, Depression and a criminal career is greatly increased (Better Health Channel, 2018; Dretzke et al., 2005).

Comorbidity

Preschool children with behavioural problems are usually not covered by one diagnostic label. They usually show a range of symptoms that belong to different disorders or problems and can meet criteria for more than one diagnostic category. The symptoms also differ at different times during life (Gillberg, 2010; Gillberg et al., 2004).

Comorbidity is often found in children who have received an ADHD diagnosis. Up to 50% of children diagnosed with ADHD could be diagnosed with one comorbid disorder, 33% with two other disorders and 10% with three disorders (Szatmari, Offord & Boyle, 1989). The most common of these comorbidities is disruptive behaviour problems, with a prevalence of 30–70% (Biederman & Newcorn, 1991). Worse outcomes are more common in children with comorbid disruptive/aggressive disorders, a group which also experiences a greater level of overall impairment (Hinshaw & Melnick, 1995). A number of these comorbid disorders change from childhood to adulthood; for example, mood and anxiety disorders, with nicotine and substance use developing later (Cecil et al., 2018; Wilens & Spencer, 2010).

Turning to Conduct Disorder, 50% of all children receiving a diagnosis also meet the criteria for at least one other disorder, such as anxiety, PTSD or learning problems (Ogundele, 2018). ODD and ADHD show a similar, high level ($\leq 50\%$) of comorbidity, as do CD and ADHD ($\leq 33\%$). This comorbidity is more often seen in the combined and hyperactive/impulsive subtypes of ADHD and is significantly lower in the mainly inattentive subtype (Burke, Loeber, Lahey & Rathouz, 2005; Gillberg et al., 2004; Posner et al., 2007). Gadow and Nolan (2002) showed that preschool children with comorbid symptoms of ODD and ADHD exhibited more symptoms of other disorders, peer problems and developmental deficits compared to children who only had either ADHD symptoms or ODD symptoms.

Taylor, Chadwick, Heptinstall & Danckaerts (1996) have shown that hyperactivity in childhood may eventually lead to conduct problems in adolescence. Burns & Walsh (2002) found that ADHD symptoms influenced the development of ODD behaviour among schoolchildren. Harvey, Breaux, and Lugo-Candelas (2016) found support for the notion that ADHD in preschool children may be causally related to ODD, but not vice versa.

Theoretical framework

The Bioecological Model of Human Development

The theoretical framework of this thesis builds upon Bronfenbrenner's (1979) Bioecological Model, in which children are viewed as being nested within different microsystems, such as the family, preschool and peer group (see Figure 2).

These microsystems interact with one another, and how well they work together influences the child's behaviour as well as developmental and health outcomes. The inter-relations between these systems are defined as the mesosystem. According to this model, individuals are affected by their exosystems; one such example is external support for parents but also the extended family and community. The term macrosystem is used to denote the social environment, cultures, social structures, laws and policy (Bronfenbrenner & Morris, 1998).

A further development of Bronfenbrenner's Bioecological Model (Tudge et al., 2016) is the Person-Process-Context-Time (PPCT) Model (Bronfenbrenner & Evans, 2000). Proximal processes can be said to involve reciprocal interactions with other people, objects and symbols in the immediate surroundings; i.e. in the micro systems the child attends (Bronfenbrenner, 1999).

Figure 2. The Bioecological Model with the preschool child (person) in interaction (proximal process) with the family, preschool teacher and peers in the micro and mesosystem (context), in transaction; microtime (specific activity) and mesotime (regular behaviour).

The proximal processes involve different forms of personal interactions and the context, such as interactions between the child and parents or preschool teacher or objects in the external setting, and are central to the PPTC model. Play, for example, probably needs to become increasingly complex over time to support good development and everyday functioning. Whilst the biological and genetic aspects of a person are relevant, as Bronfenbrenner indeed acknowledges in the PPTC model, attention is

also paid to the personal characteristics the person brings into social situations, such as their demand(s), resource(s) and force(es) (Bronfenbrenner & Morris, 2006). These characteristics may enhance opportunities for exploration, elaboration and imagination. Interaction and engagement in play offer a snapshot of the proximal process in action. Hyperactivity could affect the proximal process by interfering with the child's ability to remain engaged in an activity for a sustained period of time. Time is important in the PPTC model, as time spent in proximal processes affects development. Three time-frames are presented: micro, meso and macro time. Microtime is the term given to what occurs during a specific activity or interaction. Engagement can be seen as a snapshot of a micro time-framed proximal process. Mesotime is the extent to which proximal processes, such as social interactions or play, are regular features in the person's environment. Macrotime relates to historical events in the child's or parent's life (Bronfenbrenner & Morris, 1998). Children's understanding of the environment and how they process information is dependent upon their earlier experiences, and this in turn influences the solutions they employ in subsequent situations (Wachs, 1996). Thus, proximal processes can be seen as an example of transactional processes. When exploring children's everyday functioning and development, it is important to identify transactional processes between the child and their environment (Bornstein & Sameroff, 2009). In transactional processes, continuous interaction between the individual and their current context work together in self-reinforcing spirals, thus furthering development. Hence, both the child's personal characteristics and factors in the environment constantly provide new information to be processed during the developmental process (Sameroff, 2010). It is likely that engagement can be seen as an expression of a functioning proximal process. The preschool child's engagement in activities and social interaction with teachers and peers influence the preschool teacher's responses and peers' desire to interact with the target child, which in turn affects the child. The child's engagement in activities and social interaction in relationships with parents, other children and teachers is part of the proximal processes. Thus, transactions are dependent upon how different individuals' behaviour changes and interacts over time (Kuczynski & Parkin, 2009; Ployhart & Vandenberg, 2010). To conclude, children are also active in creating their own development (Bronfenbrenner, 2005) and personal characteristics by acting on the environment based on these characteristics. Biological conditions, along with mental health and behaviour, all affect the child's environment and their whole life (Bergman, Cairns, Nilsson & Nystedt, 2000; Bronfenbrenner & Morris, 2006). In a 20-year follow-up study, Champion, Goodall, and Rutter (1995) found that experiences such as the occurrence of seri-

ously adverse experiences specifically, and the number of problems experienced in adulthood generally, correlated with disturbances of affect or behaviour in earlier life. Exploring the combined effects of both positive and negative variables on children's development in daily functioning over time may provide a more holistic picture. By studying these combined effects on developmental lines over time, knowledge may be gained as to how best to support positive development. In the current thesis, a longitudinal, three time-point study has been used to highlight the transactional process.

Protective and Risk Factors

There are a number of key concepts inherent to this thesis, some of which are referred to in Figure 3. These are; The preschool child's development and functioning, involving several protective and risk indicators; The biological prerequisites, including genetic inheritance, personal characteristics, temperament and cognition; The environment and context (family and preschool, micro and macrosystem), which can include psychological stress; The outcome in mental health.

Figure 3. The Preschool child's development and function with several protective and risk factors.

By studying mental health and behavioural problems over time, and examining possible relationships between mental health and different environmental and personal protective and risk factors, knowledge may be generated about how to best support child development and functioning.

While the exact cause of behavioural problems and disorders in preschool children remains unclear, the present consensus states that these problems are best explained in relation to a gene-environmental interaction (Ogundele, 2018). Protective and risk factors respectively increase or decrease the probability of certain outcomes. These factors occur in patterns, for example, of characteristics, relationships, behaviours and circumstances, and are linked to the individual, family, peers, pre-schools, residential areas and other environmental factors (see Table 1) (Bergman, Magnusson & El Khouri, 2003; Rutter, 1994; Rutter, 2003). Currently, more risk factors have been identified for externalising rather than internalising problems in preschool children. However, this may simply be due to the fact that more research has focused upon the former (Andershed & Andershed, 2015). Despite the nature of the underlying problems being dissimilar, the actual risk factors associated with these problems probably overlap, as externalising and internalising problems appear to interact in adolescence (Costello, Mustillo, Erkanli, Keeler & Angold, 2003; Leadbeater, Thompson & Gruppuso, 2012). When several risk factors concur, the prevalence of mental health problems among children increases markedly. Conversely, a smaller number of risk factors often results in the reduced occurrence of mental health problems (Wille, Bettge, Wittchen & Ravens-Sieberer, 2008). The presence of one or more protective factors can in essence increase levels of resilience despite contingent risk factors, enabling the child to subse-quentially function and develop well despite the presence of the aforementioned risks (Włodarczyk et al., 2017).

There are several ways in which protective and risk factors can be categorised. One alternative, which has clear practical consequences, is to divide them into the categories of dynamic, changeable factors, and those that cannot be changed, static factors. Dynamic factors include such things as the child's behaviour or the relationship between the parent(s) and child, and have the advantage of being malleable, meaning that they can in fact be affected by support efforts. Static factors, such as gender, ethnicity or prior events in the individual's life, cannot be affected by means of additional support. In other words, when making efforts to improve development for individual children, the focus should primarily be on dynamic risk factors. Another form of categorisation is to look at either proximal (direct) factors causally related to the outcome or distal (indirect) factors, which are related to the outcome through their association with the aforementioned proximal factors. A third method of categorisation with the purpose of intervention is to categorise factors into initiating (what caused the problem to begin with) or maintaining (what is causing the problem to continue) (Andershed & Andershed, 2015). As previously mentioned, risk factors for emotional and behavioural problems in early childhood may depend upon the interplay between genetic factors and the

child's present (or previous) environment. NICE (2009) shows in a systematic research overview (longitudinal follow-up 18–32 years) that there are a number of risk factors in the development of Antisocial Personality Disorder, these being behavioural problems during early childhood or factors inherent to the family, such as insecure attachment, living in a single-parent household and having parents who are separated. The age at which these factors are most potentially detrimental ranges from the prenatal stage up to five years of age. Mohr-Jensen and Steinhausen (2016) conducted a systematic review of childhood ADHD (4–15 years) and found significant associations with antisocial involvement and an increased risk of criminal convictions in adolescence and adulthood.

There are a number of protective factors, and these can be divided into two different types. Promotors have a “direct effect” as they almost always result in a positive effect, whereas the protective type exerts its effect only when risk factors for the child are also present (acting as a “buffer”) (Wille, Bettge, Wittchen & Ravens-Sieberer, 2008). Protective factors decrease the risk of behavioural problems and can be specific to the family, the preschool, the child or to the child's broader social environment (Andershed & Andershed, 2015; Wille, Bettge, Wittchen & Ravens-Sieberer, 2008). Guardians/parents are the single most important factor in ensuring good mental health. A warm and positive atmosphere in a home characterised by involvement from two well-functioning parents and a few siblings, together with a favourable level of insight into behavioural problems on the part of the parents, as well as a good social network, provides children with a solid base, facilitating a lesser risk of behavioural dysfunction (Campbell, 1995; Lamborn, Mounts, Steinberg & Dornbusch, 1991; Petrenko, 2013).

Parto (2011) found that high self-efficacy and/or a strong sense of self can function as a child-specific protective factor, ultimately leading to fewer mental health problems among adolescents. The preschool child's engagement, for example in play, is in itself a protective factor for mental health (Aydogan, 2012; Raspa et al., 2001). Social skills in the form of positive interactions and relationships with friends and teachers are also a protective factor (Cederblad, Dahlin, Hagnell & Hansson, 1994; Hoza, 2007; Hughes, Bullock & Coplan, 2014). Social environmental factors, such as positive teacher responsiveness, with a warm, caring climate, together with peer group interaction, are also reported to be protective factors for the child (Lippard, La Paro, Rouse & Crosby, 2017; Sjöman, Granlund & Almqvist, 2016).

In terms of risk, several researchers highlight problems in the family as the main risk factor for subsequent behavioural problems in children. A number of negative family circumstances can come into play here, including traumatic experiences, poverty, low maternal education, troublesome pregnancies or premature birth (Conger & Donnellan, 2007; Murray et

al., 2016; Owens & Hinshaw, 2013), as well as parental factors such as antisocial behaviour, abuse and family stress (Campbell et al., 2000; Côté, Vaillancourt, LeBlanc, Nagin & Tremblay, 2006; Huijbregts, Séguin, Zoccolillo, Boivin & Tremblay, 2007; Tremblay et al., 2004).

Maternal depression during the first year of life has been extensively researched, together with the subsequent effects on the child's emotional and behaviour problems. This is especially true in relation to the co-morbid psychopathology that is believed to be associated with less-than-optimal mother-child interaction (Carter, Garrity-Rokous, Chazan-Cohen, Little & Briggs-Gowan, 2001; Korja et al., 2008; Madigan, Moran, Schuengel, Pederson & Otten, 2007; Trapolini, Ungerer & McMahon, 2007).

Smeeckens, Riksen-Walraven, and van Bakel (2007) have shown that poor child-parent relationships are often characterised by rejection of the child by the mother, often in conjunction with low parental involvement in the child's activities during the age span of 15 to 28 months, and this was found to be a predictor of externalising behaviour at age five.

McKinney and Renk (2007) found a number of child-specific risk factors, such as the child's temperament, including lability, negativism, restlessness and a short attention span. Researchers have also shown that there may be ensuing problems with language and cognition, developmental delay, fewer positive interactions, less play and more speechless activities as risk factors (Campbell, 1995; Petrenko, 2013).

Several researchers have highlighted psychological stress as a risk factor and this especially applies to stressors which exceed the child's capabilities, as well as their ability to handle things such as negative emotions or relationships and fear (Gunnar, Talge & Herrera, 2009). On the other hand, coping can be seen as a health promotion factor in situations where cognitive and behavioural strategies are needed in order to help the child to handle the specific internal or external requirements being expected of them (Folkman, Lazarus, Pimley & Novacek, 1987). Gunnar, Kryzer, Van Ryzin, and Phillips (2010) have shown that higher levels of cortisol are found in pre-schoolers during the afternoon compared to those who do not attend preschool. This higher level of cortisol is associated with intrusive, over-controlling care on the part of the preschool teacher. In boys especially, this increased cortisol was coupled with aggressive behaviour, while for girls it was more often observed together with anxious, vigilant behaviour. It has been suggested that an outdoor environment may indeed function as a protective factor counteracting the impact of negative stress (Söderström et al., 2013).

Table 1. Respective risk and protective factors for future externalised and internalised problems in preschool children. For a complete list of references, please see chapter entitled “Protective and Risk Factors” (page 30-32).

	Risk Factors	Protective Factors
Child Factors		
Static	Premature birth Developmental delay	“Genetic health” High IQ Easy temperament
Dynamic	Language and cognition problems Behavioural problems Difficult temperament, such as aggressiveness Labile, short attention span Impulsivity and inhibition disorders Resentment and tension applicant behaviour Sleeping, eating problems	Effective emotional regulation Engagement Social Interaction Somatic health High self-efficacy / Sense of self
Environmental		
Parental Factors		
Static	Difficult pregnancy or premature birth Low IQ Low level of education Single parenthood Young motherhood	Secure attachment parent/child Parents’ ability to meet the child’s need for security and stimulation Minimised parental childhood separations
Dynamic	Insecure attachment parent/child Mental health problems such as depression Crime Low socioeconomic status Big family/Overcrowding Family stress Marriage problems, Separations Conflicts Violence in the family Child witnessing violence Physical, mental punishment of children Neglect, Abuse Foster care placement Low commitment Low affection Parents’ negative control	Positive parental/child relationships Parents’ responsiveness Parents’ acceptance Stable social network Stable work and economy
Preschool Factors		
Dynamic	Peer problems Low teacher responsiveness Less play and positive interaction Stress	Other children’s positive interaction Teacher responsiveness Warm, caring climate Peer group interaction Outdoor environment

Risk factors can be seen as “causes” of mental health problems, examples of these being inheritance, family stress, a depressed mother etc. In Study IV of this thesis, those protective or risk indicators that it is possible to estimate at an early stage among preschool children are measured (for example: developmental delay, emotional problems, prosocial behaviour, collaboration with parents, peer problems, teacher’s responsiveness).

Promotion and Prevention in Mental Health

According to the WHO, mental health promotion:

Aims to protect, support and sustain emotional and social wellbeing and create individual, social and environmental conditions that enable optimal psychological and psychophysiological development and improve the coping capacity of individuals. Mental health promotion refers to positive mental health rather than mental ill health. (WHO, 2008)

Health promotion is thus a process through which people are enabled in increasing their control over, and improving, their own health. In order to attain a state of complete physical, mental and social wellbeing, a person or group must be enabled in first identifying, and then realising, their aspirations to satisfy their needs, and to change, or at least be able to cope with, the environment in which they find themselves. Therefore, health promotion is not merely the responsibility of the health sector alone, but rather goes beyond the concept of healthy lifestyles to that of wellbeing (WHO, 2008; WHO, 1986).

Thus, prevention as discussed here entails using a number of different measures to prevent mental health problems. Prevention is usually divided into three different types. Universal prevention targets a whole population, such as a whole preschool group, and thus is included in the aims of the preschool. Selective prevention is aimed at subgroups for whom the risk of developing mental ill health is greater than in other groups; for example, families and preschools in vulnerable social areas. Indicated prevention is aimed at high-risk individuals, such as children in families where the parents are in the early stages of substance abuse problems, but also for children with identified/diagnosed psychiatric problems (Public Health Agency of Sweden, 2016; WHO, 2008). Preschool itself can be seen as both promotion and prevention for young children. A systematic review from Sweden found that attending preschool can improve children’s mental health (Bremberg, 2001). Bohlin and Hagekull (2009) also found positive psychological health effects in children who had attended preschool.

Early Detection

Mental health disorders often debut in early childhood and manifest in the form of behavioural problems, which later spill over into adulthood. In order to provide early intervention, early detection is important (Bagner et al., 2012; Caspi et al., 1998; Kieling et al., 2011; Lavigne et al., 1998). Such early detection of developmental delays and abnormal/deviant behaviour aids in the elimination of eventual obstacles and thus promotes positive development, stimulating the child's inherent resources whilst simultaneously acting as a buffer to the prevention of further problems appearing (Futures, 2008; Zachrisson & Dearing, 2015). One arena most suitable for early detection is preschool. This is because preschool teachers have experience of many children; thus, they see the child interacting and can compare her or him with other children of the same age in the preschool group.

Screening

The ultimate goal of screening is to detect potential problems early enough for appropriate interventions to be made. In screening, it is important to use instruments with high sensitivity (a high percentage of children who are correctly identified as having behavioural problems) and high specificity (a high percentage of children who are correctly identified as not having behavioural problems). If children screen positive for a problem, a more extensive evaluation can subsequently be performed (Public Health England, 2013).

Screening can be performed as a general process; for example, in preschool or CHC, surveying all the children in a particular age group or population. But it can also be conducted as a selective or targeted screening, thus screening those who most are at risk; for example, preschools in socially vulnerable areas. If children screen positive for a problem, a more extensive evaluation will subsequently be performed, in which specificity is given more weight (Public Health England, 2013).

In order to reach a larger population, general screening in preschool or CHC is especially useful. Screening performed in preschool can pose specific challenges because families do not necessarily accept interventions, or the services subsequently offered if problems are detected. Research has shown that the screening of preschool children is successful in relation to the emotional and behavioural problems most commonly found in primary-care settings (Karabekiroglu, Briggs-Gowan, Carter, Rodopman-Arman & Akbas, 2010; J. O. Larsson, Aurelius, Nordberg, Rydelius & Zetterström, 1994; Weitzman & Leventhal, 2006). Research indicates that screening for language and psychiatric disorders in early childhood is

beneficial, given the range of effective interventions available for early neurodevelopmental and communication problems (Baron-Cohen, Allen & Gillberg, 1992; Law, Rush, Anandan, Cox & Wood, 2012; Nygren et al., 2012) and because problems persist into adulthood and interventions in preschool children can be effective both directly and in the long run (Billstedt, Gillberg & Gillberg, 2005; Caspi et al. 1998; Gillberg, 2010; Odgers et al., 2007).

The Swedish Preschool Context

The Swedish preschool context is presented in order to give a picture of where and how early identification and intervention could take place.

In 2017, almost 84% of children between the ages of 1 and 5 attended preschool in Sweden, and 94% in the age group 4–5. Children spend an average of four to eight hours a day in preschool. On average, there are 5.1 children per preschool staff member, with an average of 12.4 children per preschool group in the younger age group and 15.4 for those aged 4–5 years old. Of the 1–5-year-olds with foreign backgrounds in both parents, 79% attend preschool; the corresponding number for children with a Swedish background is 84%. Only 40% of preschool staff are graduate preschool teachers, as many as 30% lack a specific education to work with children and only 4% are male (Samuelsson, Williams & Sheridan, 2015; Swedish National Agency for Education, 2018a).

In 2002, a reform was implemented in Sweden which reduced parents' fees for preschool, and this led to a 10% increase in the number of children attending. Positive development and psychological conditions were noted, mainly in the 6–7-year-old age group (Van den Berg, 2016). Children in Sweden have the right to keep their place at preschool for at least 15 hours a week when siblings are born, or if the parents are unemployed (Swedish National Agency for Education, 2010).

Ninety-five percent of Swedish 6-year-olds attend preschool class (Swedish National Agency for Education, 2017), and as of autumn of 2018 attendance is mandatory (Swedish National Agency for Education, 2018b). Children in Sweden begin first grade at the age of 7 (SFS:2010:800).

According to the Swedish National Agency for Education (1998/2010), the preschool teacher is responsible for learning and the continuous development of the child, but it is the preschool activities themselves and not the individual child that are targeted here. Preschool teachers should also aim to cooperate well with parents and offer developmental assessment meetings at least once a year. Inequalities in society are also to be compensated for by safe care and education, and these should also be inclusive. This means that every child should be afforded the support and

care that they need from the preschool teacher. Preschool teachers' care offers the child an emotional relationship, security, consolation and protection. Early detection consists both of identifying children who need additional support on top of what is provided to all children, and of teachers reporting to external specialists when children in need are detected. Detection is primarily discussed as reporting children at risk to external experts. Children need to feel safe in order to be able to engage in both play and education and incorporated into this is the idea of receiving a good standard of care. Since the revision of the curriculum in 2010, the preschool assignments of conveying knowledge and learning have become somewhat clearer. The Swedish preschool curriculum stresses that each and every child's engagement should be considered when it comes to daily activities (Swedish National Agency for Education, 1998/2010). Swedish preschools are somewhat unique in relation to other countries outside Northern Europe as time spent there consists more of free play rather than instructed learning tasks, and the children often spend more time in free play outdoors (Engdahl, 2011; Montie, Xiang & Schweinhart, 2006). In summary, Swedish preschool is designed to create a safe environment and to improve children's mental stimulation as well as their interaction with peers and teachers and their general socialisation outside the family unit. It has been found that, compared to others, children attending preschool were privy to better health and life chances, and better social, emotional and cognitive development, including intellectual abilities such as information processing, problem solving, language development, memory and the ability to experience, regulate and express emotions and explore their world (Bohlin & Hagekull, 2009; Bremberg, 2001; Gustafsson et al., 2010). The early start in preschool, combined with the relatively low number of children per teacher, makes preschool a suitable site for early detection.

Preschool Impact on the Child – Other Countries

Several researchers from different parts of the world have shown that attending preschool has a positive effect on how children manage later schooling (Feinstein, Sabates, Anderson, Sorhaindo & Hammond, 2006; Irwin, 2007; Montie et al., 2006; Sammons et al., 2004). These positive effects appear to be stable throughout the school years and beyond, extending into early working life (Barnett & Belfield, 2006; Belsky, Vandell, et al., 2007; James & Pollard, 2008; Sylva, Melhuish, Sammons, Siraj-Blatchford & Taggart, 2011).

Various studies of preschool children in the Nordic countries have shown that, when the children subsequently attended school, those who had started preschool earlier showed higher cognitive scores at school entry,

and did much better at maths, languages, reading and other subjects in school; this was also reflected in higher grades (Drange & Havnes, 2015; Esping-Andersen et al., 2012; Gupta & Simonsen, 2016). Children who had attended preschool also showed a more positive attitude towards school later on (Gupta & Simonsen, 2012; Havnes & Mogstad, 2015). Attending preschool also seems to be linked to higher income in adulthood (Havnes & Mogstad, 2015). The teacher's responsiveness, involvement, structure and autonomic support to the child, as well as the overall emotional context in preschool, have a direct influence on the child's learning and wellbeing (Lippard et al., 2017; Skinner & Belmont, 1993).

The question of whether the parent-child attachment bond may be adversely affected by preschool has been debated, but the findings indicate that the preschool teacher has taken on the role of a complementary attachment figure (Caldwell, Wright, Honig & Tannenbaum, 1970; Hagström, 2010; Lamb, Sternberg & Prodromidis, 1992). Preschool teachers may also compensate for the possible weaknesses found in some parents and be of support to the family in helping their child. In cases where parents do not give the child sufficient mental or/and physical care on a daily basis, preschool teachers can often also detect neglect among children (Lundén, 2004). Attending preschool appears to have an even larger effect on children from socioeconomically vulnerable families. Studies in the USA have shown that children's experience of preschool can reduce behavioural health risk factors by improving educational attainment and family environments as well as affecting factors such as health insurance and income in adulthood (Jones et al., 2010; Muennig, Schweinhart, Montie & Neidell, 2009). After a reform in 1975, access to preschool increased markedly in Norway, especially favouring families who were socioeconomically vulnerable. This led to increased access to preschool and the children in turn secured a longer period of education and higher income as adults when compared to children in socially vulnerable families some 30–40 years earlier (Havnes & Mogstad, 2015).

Higher levels of education in preschool teachers seem to have positive effects on interactions between the teachers and children as well as the cognitive and social development of the children (Coplan, Wichmann, Lagace-Seguin, Rachlis & McVey, 1999; Early et al., 2007). One possible explanation for these effects may be that many of the children included in studies come from low-income and poorly educated families (Desimone & Long, 2010). Increasing formal competence by way of structured activities in order to promote the professional knowledge and approaches taken by preschool teachers has also proven to have a positive effect on children's cognitive and social development, as well as their mental health (Jensen, Jensen & Rasmussen, 2015; McCutchen et al., 2002; Piasta, Logan, Pe-

latti, Capps & Petrill, 2015). These studies were heterogeneous with regard to the type and extent of the resulting increase in competence. No or little connection was found between child-teacher ratio and child development (Anders et al., 2012; Bremberg, 2001).

Research has also shown that an early start in preschool most often progresses into a more socially well-adapted life, with less crime at school age and in adult life (Schweinhart, 2004). Attending preschool has shown positive effects in several different research studies for those with parents in socio-economically stressed situations (Bjurek, Gustafsson, Kjulín & Kärrby, 1996; Esping-Andersen et al., 2012; Havnes & Mogstad, 2015; Magnuson & Waldfogel, 2005). A study by Bohlin and Hagekull (2009), which included follow-ups up to the age of 21, found positive effects for children who had attended preschool in relation to those who had not. Overall, participation in preschool from a young age appears to be important for children's learning and mental health.

Early Intervention with Children in Need of Special Support in Preschool

Every preschool child should be given the chance to develop their identity, satisfy their curiosity, experience enjoyment, explore self-autonomy and actively participate regardless of special needs in the form of mental, physical, socio-economic or other needs (SFS:2010:800; Swedish National Agency for Education, 1998/2010). If the preschool teacher is worried about a child's health, they may with consent from, parents or together with parents, contact CHC in order to work together in matters concerning the child. Swedish children in need of special support are entitled to attend an ordinary preschool, and preschools are obliged to provide support which is to be adapted to the group as well as the specific needs of the child themselves, i.e. preschool should be inclusive (Swedish National Agency for Education, 1998/2010). Around 4–5% of preschool children in Sweden are formally identified as needing special support due to a diagnosis or disability. However, if preschool staff themselves are allowed to assess the child's need for special support, based on behavioural problems and in relation to everyday functioning, then this figure rises to between 11 and 17% (Lillvist & Granlund, 2010; Lutz, 2009). Children in Swedish preschools are entitled to either indirect or direct special support. This can take the form of general activities among all the children in the group (indirect special support) or specific interventions to meet specific needs of a child (direct special support) (Sandberg, Lillvist, Eriksson, Björck-Åkesson & Granlund, 2010). No exact information can be found in the curriculum as to how to design special support; rather, this is left to

the discretion of the teacher at each preschool along with heads of staff, who have knowledge of the curriculum, didactic skills and children's development and learning (Sheridan, Williams, Sandberg & Vuorinen, 2011).

In special education research, special support is categorised as necessary based on the child's characteristics and development or from a relational perspective, based on the environment–child fit (Nilholm, Almqvist, Göransson & Lindqvist, 2013). Preschool children receive special support more often in preschool if they have an identified disability (intellectual disability, motor disability, hearing or visual impairment, or language delay) and/or if they have been given a diagnosis (Lutz, 2009; Simeonsson, 2006). The child's right to special support is influenced by the preschool teacher's expectations of the "system" as well as by the child's ability to meet the requirements of the preschool environment (Emanuelsson, Persson & Rosenqvist, 2001). When assessing children's special needs, a functional approach can be used to define the difficulties encountered in relation to the everyday environment and how well a day at preschool functions (Lillvist, 2010; Lillvist & Granlund, 2010; Simeonsson, 2006). The child's potential need for special support is often assessed by preschool staff and is based on the child's potential behavioural or peer problems (Lillvist & Granlund, 2010). Based on the child's individual characteristics and everyday level of functioning, as well as in relation to environmental resources, the most common reason for being given help is peer problems and hyperactivity (Sandberg et al., 2010).

Interventions in preschool often have the goal of supporting group function by, for example, reducing the impact of individual children's behavioural problems. However, this does not primarily help in supporting how well the individual child with behavioural problems functions (Drugli & Hjemdal, 2013).

It has been found that preschools with many children in need of special support incorporate these children into their daily activities to a greater degree than those with few special support children; the latter tend to provide support outside the framework of the regular routines of the preschool (Sandberg et al., 2009). Interventions that include the child, parents, preschool and the whole environment improve the outcome, and the most important inclusion for best prognosis is seen when the parents are included (Jones et al., 2010; Petrenko, 2013). The prioritisation of preschool as a support system for families and children with special needs is an initiative that has a long tradition in Sweden (Zoritch, Roberts & Oakley, 1998). CHC is the preschool's first port of call in healthcare when mental health problems are suspected or detected, and preschool have the choice of contacting CHC after consultation with the child's parents or vice-versa.

Early Detection in Healthcare

Within the field of healthcare, it is the Child Healthcare System (CHC) that is responsible for the early detection and prevention of mental health problems among preschool children. The CHC has a well-established screening programme which reaches 95% of all preschool children in Sweden (Wallby, Modin & Hjern, 2013). There are nine health visits during a child's first year of life and then at 18 months, 30 months, 3, 4 and 5 years of age, and the Child Health Nurse (CHN) is the coherent link in the contacts. The CHC is intended primarily to promote health and prevent different health problems. This means promoting physical and mental health and good social relationships and conditions, preventing diseases and injuries and giving advice about good lifestyle choices (National Board of Health and Welfare, 2014; Sweden County Councils and Regions, 2018). Another important undertaking for the CHN is to pay attention to problems, illnesses and injuries and to quickly initiate various activities, either directly within the profession or by referral to a CHC psychologist or specialist care so that those in need are quickly offered well-adjusted care. Meyer and Lavin (2005) describe how vigilant nursing, with a theoretical and clinical gaze, may help in identifying behavioural problems in a child and predicting how this may adversely affect the child's mental health both now and in the future. Health monitoring provides an opportunity to highlight conditions that should be subjected to further investigation in order for the child and their family to be given the necessary support and treatment. Supporting teachers in the detection of different types of problems can therefore be formatted into standardised assessment methods (questionnaires, scales and observations) with proven reliability. A central task for the CHC is to keep an eye out for children who show signs of behavioural or developmental problems through health monitoring (National Board of Health and Welfare, 2014).

A knowledge evaluation by the National Board of Health and Welfare (Gustafsson & Hansson, 2013) found that there was a need for updated systematic reviews evaluating the assessment methods of good quality for the early detection of mental health issues relevant to CHC. Instruments that indicate ASD among children (Checklist for ASD in Toddlers, M-CHAT) and depression among mothers (the Edinburgh Postnatal Depression Scale, EPDS) are already in use (National Board of Health and Welfare, 2014; Sweden County Councils and Regions, 2018; Wickberg, 2016). It was noted that CHC staff prefer to follow basic routines and become acquainted with children's development and health status through health interviews rather than by the child's guardian simply filling out questionnaires (National Board of Health and Welfare, 2008). Early detection of

mental health problems opens up an opportunity to provide interventions that allow the child to develop optimally despite these difficulties.

Early Interventions in Healthcare

CHC efforts can consist of preventive measures in a child's life, such as general support programmes aimed at all parents, but they can also take the form of early action where there are signs of problems in development, such as adapted parental support programmes which target specific problem areas (Marklund et al., 2012; Oldrup & Vitus, 2011; Petrenko, 2013), similar to the parenting and home visiting programme to prevent children from being subjected to violence, abuse or neglect (Mikton & Butchart, 2009). Several studies have shown that group-based parent support programmes can improve emotional and behavioural problems in preschool children. However, the long-term efficacy of these programmes is uncertain, as are their primary prevention effects (Barlow, Bergman, Kornør, Wei & Bennett, 2016; O'Brien & Daley, 2011).

There is no homogeneous system of mental healthcare for young children in Sweden. There are several different kinds of clinics for babies and young children, some of which fall under the jurisdiction of Child and Adolescent Psychiatry (CAP), while others are run by the respective municipalities, CHC, or as a collaboration between these actors (Furmark & Neander, 2018). These units work with interactive treatment and psycho-education using methods such as Marte Meo (Aarts, 2008), Circle of Security Parenting (COS-I) (Hoffman, Marvin, Cooper & Powell, 2006) and the Marschak Interaction Method (MIM) (Martin, Snow & Sullivan, 2008).

The specialist level, such as Child and Youth Habilitation services or CAP, receive referrals from CHC in cases of suspected ASD, ADHD, Intellectual Disability or ESSENCE concept symptoms (Gillberg, 2010; Spjut Jansson et al., 2016). After investigation, the specialist-level intervention usually starts with parental psycho-education and counselling in communication skills and behaviour modification (Ferm, 2011). Parental contributions focusing on communicating with the child, implemented at an early age and continued over a long period of time, together with the preschool teacher, seems to be the most effective intervention (Carr et al., 1994; Devescovi et al., 2016; Hejlskov Elvén, 2009; Jones et al., 2010; Spjut Jansson et al., 2016).

In some parts of Sweden and the other Nordic countries, there are separate psychiatric teams/units for small children (0–5 years) within which a number of clinics sometimes collaborate either at the consultation level or in investigation and treatment itself (Furmark & Neander, 2018; Gillberg, 2010; Marklund et al., 2012). In such a collaboration investigated by

Sourander et al. (2016), parents with 4-year-old children exhibiting disruptive behaviour were given an Internet-based parent training programme, with positive results.

Collaboration for early detection and intervention

Fält, Sarkadi, and Fabian (2017) included preschool and CHN in their study, and reported that the quality of CHC health check-ups for 3–5-year-olds improved when they received SDQ ratings from the preschool teacher as well as from the parents. However, successful implementations of this kind require considerable work at several levels; for example, information sharing, privacy issues, the participation of all parents and normative thinking. There are both laws and guidelines which support such cross-agency work, as long as it is protecting the child's best interests and the parents give consent for such contact (National Board of Health and Welfare, 2014). Zoritch et al. (1998) point to evidence suggesting that CHN and preschool, in combination with other quality efforts at an early age, have a positive effect on selected groups of children who are at high risk of developing mental health problems. Significant positive effects on children's intellectual and health development, as well as on the wellbeing of their parents, together with long-term effects such as improved learning and reduced criminal behaviour, have been found. However, the evidence for generalisation of either the positive or negative effects of these interventions to children from the general population is considered to be limited since all studies except one have been conducted in the USA, and most of these focused on families and children in underprivileged environments.

This type of collaboration should preferably take place within the framework of the many care and social service contacts that the parents of children with special needs often have. For example, improved collaboration between maternal healthcare and CHC provides an opportunity for the development of parent support on several levels (individually, directed and generally), thus creating a clearer chain of support for both parent and child (Bondestam et al., 2013; Kling et al., 2010).

In Sweden, Family Centres are designed to work towards health promotion as well as offering family support and general early prevention. The range of services offered by Family Centres, at a minimum, are: CHC, maternal healthcare, preventive social services and open preschool (Parent and Baby groups). A fundamental function of the Family Centre is the collaboration which exists between the different professions housed under one roof (The Swedish Association to Promote Family Centres, 2014).

Lack of Knowledge

Several Swedish reports has shown that current knowledge about children's mental health status is weak and that this subject area needs further research. Although professionals' knowledge of psychiatric disorders in school-aged children is vast, our understanding of preschool children's mental health problems still lags far behind (Bondestam et al., 2013; Gustafsson et al., 2010; Gustafsson & Hansson, 2013; Petersen et al., 2010). This report serves to highlight this particular area of research; that is, preschool children and diagnosable mental health problems and behaviour problems, including differing degrees of impairment, and to validate structured methods like screening questionnaires for preschool children rated by preschool teachers. It is also important to extend our knowledge about preschool as an environment where mental health problems can be identified and where preschool teachers can provide support for the child in addition to the support given by parents (Almqvist et al., 2018). Another area that needs to be prioritised by the application of an interdisciplinary research approach is that of respective risk and protection factors regarding mental health problems in children. It is a fact that mental health is also affected by demographic, ethnicity and social variables, and it has been suggested that this should be considered in future research (Bondestam et al., 2013; Gustafsson & Hansson, 2013; Petersen et al., 2010).

THE EMPIRICAL STUDIES

Overall Aims

The overarching aim of the present thesis was to identify patterns of emotional and behavioural problems indicating mental health problems in preschool children. To facilitate the early detection of such problems, one available screening instrument was validated. The development and interaction of externalising problems in preschool children were studied over a period of time. Functioning and behaviour and their relations to protective and risk indicators in the environment and personal characteristics were explored. The long-term goal was to increase our knowledge about the early identification of emotional and behavioural problems in preschool children in order to facilitate early intervention.

Aims

Study I

To investigate whether SDQ is a reliable and valid instrument for identifying behavioural problems in children aged 1–3 years and 4–5 years in a Swedish population, as rated by preschool teachers.

Study II

To investigate the frequency of emotional and behavioural problems, as rated by preschool teachers using SDQ, for children between 1 and 5 years of age in Sweden, and to establish Swedish norms for SDQ in preschool children.

Study III

To investigate the development of externalising problems in preschool children over time, and the way in which conduct problems are linked with hyperactivity problems.

Study IV

To describe typical longitudinal pathways between clusters based on engagement, social interaction, hyperactivity and conduct problems in preschool children and how these pathways are related to dynamic and static risk and protective indicators.

METHOD

All empirical studies outlined in this thesis were part of the longitudinal research project “Early Detection – Early Intervention in Preschools” (TUTI) (Granlund et al., 2016). These studies were conducted between 2012 and 2014 and were initiated by the National Board of Sweden in an effort to investigate the mental health status of preschool children in Sweden, and to determine which interventions were currently in use in preschools. The project group consisted of four senior researchers and two doctoral students in the fields of medicine, psychology, disability science, special education and nursing care. The doctoral students collected data by visiting preschools in three study waves. An overview of the four studies in the thesis in terms of settings, populations, questionnaires and statistics appears in Table 2.

Table 2. Summary of the thesis studies I–IV; study settings, populations, questionnaires and statistical methods

Study	Settings	Population	Questionnaires	Statistical analyses
I	Cross sectional waves 1–2	690 children, mean age 44 months (SD =15) (668 “normal” sample, 22 clinical sample)	SDQ with supplement, C-TRF, CEQ	Cronbach’s alpha, Split half, Spearman rho, Mann-Whitney U-test, Principal component analysis (PCA)
II	Cross sectional-waves 1–2, each child once. Longitudinal stability waves 1–3	815 children, mean age 42 months (SD=16) at wave 1 Longitudinal, 195 children	SDQ with supplement	Pearson r, Mann-Whitney U-test, Boxplots
III	Longitudinal waves 1–3	195 children all 3 years. Mean age 32 months (SD=9) at wave 1	SDQ	Latent Growth Modelling (LGM) within a Structural Equation Modelling Framework
IV	Longitudinal waves 1–3	197 children all 3 years. Mean age 32 months (SD=9) at wave 1	SDQ, CEQ, Social interaction, ICF-CY, Collaboration with parents, Preschool Manager’s questionnaire	Person r, Pattern-oriented cluster analyses with SLEIPNER, EXACON module in SLEIPNER, Fisher’s Exact test, Tukey’s B Post Hoc Test

Note; explanation of the names of the questionnaires: Strengths and Difficulties Questionnaire (SDQ), Child-Teacher Report Form (C-TRF), Children’s Engagement Questionnaire (CEQ), Social interaction skills in preschool, International Classification of Functioning Disability and Health: Children and Youth Version (ICF-CY).

Participants

The Whole Study

In the first data collection set, 1615 children were invited to participate. The parents of 663 of these children (41%) subsequently gave their consent. During the second year of the study, the parents of a further 91 children participated, and in the third year a further 73 children were incorporated into the study (Figure 4). In total, 827 children participated: 425 boys and 394 girls (8 missing gender) with a mean age of three and a half years, or 42 months (SD=16, range 13–71). There was no significant mean age difference between genders.

Figure 4. Flowchart of participants included and drop-out in the four empirical studies in this thesis.

At the time of investigation, a total of 91% of the children lived with both their biological parents, 3% lived alternately with each parent and 5% lived with only their mother. Altogether, 28% of the children had a mother tongue other than Swedish (i.e. were second-generation immigrants) and, according to preschool teachers' estimation, 4.5% received special support in preschool. These figures correspond quite well with Statistics Sweden (SCB) (Statistics Sweden, 2013; Swedish National Agency for Education, 2017) estimates for this age group.

The preschool group mean size was 22 (range 8–50) children, with a mean of 4 preschool teachers (range 1–7) in the group. The child to teacher ratio averaged 5.5 children/teacher. For demographic data and information about the preschools, see Table 3. Over the three years that the study was conducted, 31 preschools participated, with 92 preschool classes. They were drawn from a stratified sample of six differently sized Swedish municipalities, representing large, medium and smaller municipalities. Approximately 47% of the children lived in small municipalities (<50,000), 45% in medium-sized municipalities (50,000–200,000) and 8% in large municipalities (>200,000). In Sweden as a whole, 43% live in small municipalities, 16% in medium ones and 41% in large; thus, large municipalities are under-represented and medium-sized ones are over-represented in our sample.

Study I

In all, 690 children (352 boys and 338 girls) with a mean age of 44 months ($SD=15$, range 15–71) took part in Study I. Of these, all 663 children from the wave 1 data collection group were included, as well as 5 children from wave 2 and 22 children from a clinical sample.

The clinical sample included 22 children (10 boys and 12 girls) with a mean age of nearly four years/47 months ($SD=11$, range 26–71). The latter participants were recruited from CHC, CAP, and Child and Youth Habilitation services. ESSENCE inclusion criteria were employed (i.e. suspected neurodevelopmental and/or behavioural problems) (Gillberg, 2010), and consequently a formal diagnosis was not required. The children in the clinical sample came from 18 different preschools in Jönköping and Linköping County, both regarded as medium-sized municipalities.

Study II

This sample involved 815 children in total (424 boys and 391 girls) with a mean age of three and a half years/42 months ($SD=16$, range 13–71). There was no significant mean age difference between genders. The children were included the first time they participated in the study, using all

three annual waves of data collection with complete SDQ forms (internal dropout of 12 children).

Table 3. Demographic data including gender, age and preschool information.

	Frequency %	Mean (SD, range)
Girls	49	
Boys	51	
Age in months		42 (16, 13–71)
Living with		
Both parents	91	
Shared living	3	
Mother	5	
Mother tongue other than Swedish	28	
Need for special support	4.5	
Preschool class size		22 (11, 8–50)
Preschool teachers in group		4 (1–7)
Child to teacher ratio		5.5

Studies II-III-IV, Longitudinal Data

Preschool teachers completed the SDQ for 651 of the 663 children included from wave 1 satisfactorily enough for the results to be used in the analyses in Studies II, III and IV (internal dropout of 12 children). Of these, 197 children (30%) participated in all three data collections (110 boys and 87 girls) with a mean age at wave 1 of two years and eight months (32 months, SD=9, range 15–57). The participation rates and gender distribution were similar for children of different ages. All 197 children were included in the longitudinal analysis of Study IV, whilst 195 were included in Studies II and III (in study IV ratings for two more children had been collected, individual handling of outliers in cluster analyses).

Of the 454 children who did not participate in all three years, 280 of these were in the older age group (48–72 months), who had now finished voluntary preschool and continued on to compulsory preschool, within another unit. However, 174 children were in the age group 15–48 months

and could have participated in all three years, but they could not be followed up due to the child changing preschool or the preschool teachers being unable to answer the questionnaires due to their work situation in year 2 and/or year 3. Out of these 174 younger children who did not participate in all three years, significantly more had a mother tongue other than Swedish (34%), than among the participants in all three years.

Procedure

All preschool managements in the various municipalities were contacted, informed and asked for their consent to participate. Preschool managers and teachers were initially invited to an information meeting. Written and video information was also provided by internet link to management, teachers and parents. For a preschool class to be included, at least one preschool teacher had to consent to participate.

The preschool teacher contacted all parents to ask for individual consent, and both parents had to provide written consent for their child's participation. The parents answered the questionnaire during the first year that they participated and preschool managers and teachers filled in the questionnaires in each of the three annual waves. Preschool teachers were required to have known the child for at least six months, and were asked to base their ratings on the two preceding weeks.

Instruments

Strengths and Difficulties Questionnaire (SDQ)

The SDQ is a well-known questionnaire in Europe, consisting of 25 items that measure child behaviours, and can be rated by parents, teachers or self-rated (from 11 years), see Table 4. The SDQ for ages 4–18 years displays good construct and concurrent validity, as well as some evidence of predictive validity (Borg, Kaukonen, Salmelin, Joukamaa, & Tamminen, 2012; Goodman, Ford, Simmons, Gatward & Meltzer, 2000; He, Burstein, Schmitz & Merikangas, 2013; Stone, Otten, Engels, Vermulst & Janssens, 2010). In this study, the SDQ teacher version for children aged 2–4 was used (Goodman, 2016). The SDQ has been translated into Swedish and validated for parental and teacher use for children between 5 and 17 years of age, and the self-rated version has been validated for children aged 11–16 years; it has demonstrated good psychometric properties (Hagquist, 2007; Malmberg, Rydell & Smedje, 2003; Smedje et al., 1999). Recently, the SDQ for parents has been used in a normative sample of children aged 2–5 years in Sweden, and here risk groups are reported as percentiles in order to identify them (Ghaderi, Kadesjö, Kadesjö & Enebrink, 2014). The

SDQ has been confirmed as having satisfactory psychometric properties in identifying 3- and 4-year-olds with emotional and behavioural difficulties (Croft, Stride, Maughan & Rowe, 2015) (see Table 4).

Table 4. The SDQ for different age groups, in Swedish.

The SDQ	Age	Raters
SDQ without impact supplement	2–4	Parents/Teachers
SDQ and impact supplement	2–4	Parents
SDQ and impact supplement *	2–4	Teachers
Follow-up SDQ and impact supplement	2–4	Parents
Follow-up SDQ and impact supplement	2–4	Teachers
SDQ without impact supplement	4–17	Parents/Teachers
SDQ and impact supplement	4–17	Parents
SDQ and impact supplement	4–17	Teachers
Follow-up SDQ and impact supplement	4–17	Teachers
Follow-up SDQ and impact supplement	4–17	Parents
SDQ without impact supplement	11–17	Self-rated
SDQ and impact supplement	11–17	Self-rated
Follow-up SDQ and impact supplement	11–17	Self-rated
*Included in this thesis		

The items are divided into 5 subscales of 5 items each, generating scores for 4 problem subscales: Conduct problems, Hyperactivity, Emotional problems and Peer problems, and 1 strength subscale: Prosocial behaviours. Responses are given on a 3-point Likert scale: (0) “not true” (1) “somewhat true” (2) “certainly true”. The total scores for the behavioural difficulties scale can be divided into 3 subgroups (normal, abnormal and borderline) by the use of cut-off scores (Goodman, 2016).

The impairment supplement questions, which describe how behavioural problems affect the child’s level of functioning, are subsequently included in the impact score. Ratings for these 8 impairment supplement questions are: (0) “not at all” and (0) “only a little” (1) “quite a lot” and (2) “a great

deal” (Goodman, 2016). For the question “Do the difficulties interfere with the child’s everyday life in the following areas?” the specification “Peer relationship and Learning” is substituted in this study with the situations: “Free play, Organised situations and Routine situations”. This is an adaption to the structure of the Swedish preschool environment, which is not as “classroom-like” as in many other countries.

Before commencement of the study, a consensus discussion was held whereby an expert panel consisting of five well-experienced preschool teachers evaluated how relevant each of the 25 SDQ questions were deemed in relation to the children they meet in the course of their profession. Based on these results and since the sample included different developmental-ages, a question about relevance (yes/no) was included after each SDQ item. Four supplementary questions were also included in year 1 in order to validate the SDQ for use with children aged 1–3 years. In this thesis, the Strength and Difficulties Questionnaire (SDQ) (Goodman, 1997) is validated for two age groups with Cronbach alphas for the total scale of .86 for ages 1–3 years and .83 for ages 4–5 years, and it is also used as a screening instrument for child behavioural problems in preschool. In addition to this validation, preschool teachers also estimated the SDQ supplement.

The Children’s Engagement Questionnaire (CEQ)

Preschool teachers used the Child Engagement Questionnaire (McWilliam, 1991) in order to measure engagement. Designed in the USA, the original 32-item instrument was used to rate how children typically spend their time when in preschool, this being identified as a measurement of engagement. The Swedish rating scale was adapted for a previous study by Björck Åkesson (1994) with the intention of clarifying what “typical” means, compared with the following alternatives: (1) almost never happens (2) sometimes happens (3) happens quite often or (4) happens very often; this version was the one used in the present study. Minor adaptations were employed in the translation of CEQ into Swedish, which resulted in the use of 29 of the original 32 items (Almqvist, 2006). With feedback from an expert panel consisting of preschool teachers and special preschool educationalists in this study, it was found that three items did not quite fit in with the Swedish preschool context and consequently only 29 of the original 32 items were used in this study. In the present Study IV, the Cronbach alpha for the total scale was .94.

Child-Teacher Report Form (C-TRF)

C-TRF is the preschool teacher version of the Child Behaviour Check List (CBCL), and is regarded as the golden standard for screening children’s mental health problems (Höök & Cederblad, 2008; Achenbach & Rescorla, 2000). Each item is scored on a 3-point scale: (0) “not true” (1)

“somewhat true” (2) and “certainly true”. The full C-TRF, which includes 98 statements, is not suitable as a screening instrument in a preschool setting since the sheer number of items is too large for the preschool teacher’s workload. In an earlier study, Almqvist reduced the items to 25 statements after consulting with preschool teachers, and found a high Cronbach alpha of 0.85 (Almqvist, 2006). In this study I, this shortened version was used and showed a Cronbach alpha of 0.91.

Social Interaction Skills in Preschool

Experiences of different sorts of social interactions and responsiveness in preschool were rated by preschool teachers in questionnaire form (Granlund & Olsson, 1998). The instrument consists of 36 items and responses are based on a 5-point Likert scale: (1) “seldom” (2) “quite often” (3) “50% of the time” (4) “fairly often” and (5) “often”. It covers: social interaction skills between the child and the teacher (10 items), the child and other children (11 items), teachers’ responsiveness towards the child (10 items) and other children’s interaction/responsiveness with the child (5 items). In this study IV, Cronbach’s alpha coefficient for internal consistency was between .73 and .92 for the different question areas.

Collaboration with parents

The Collaboration with Parents Questionnaire was used as an environmental measure in this study. This instrument was developed for use in the PEGS project (Educational Efforts in Preschool – Generally and Specifically) (Lillvist & Granlund, 2010), and concerns how preschool teachers judge collaboration with the parents of the child. It consists of 5-item, scored as: (1) “not true at all” (2) “disagree somewhat” (3) “partly true” and (4) “completely true”. In this study IV, Cronbach’s alpha was .70.

International Classification of Functioning, Disability and Health: Children and Youth Version (ICF-CY Code sets)

In this study, 7 items were used to assess developmental delay, regarding bodily function and cognition (3 questions each) and language (1 question) using the ICF-CY Code Sets (Ellingsen, 2011). These were responded to on a scale of: (1) “not true at all” (2) “partly true” and (3) “completely true”. In this study, the Cronbach’s alpha was .76. In this thesis, the results from the ICF-CY Developmental Code set are referred to as “developmental delay”.

Table 5. The questionnaire with a total of 13 questions to preschool management, 13 questions to parents/closest relatives and 193 questions to preschool teachers.

Questionnaires	Questions	Participants
Socio-demographic measurement Studies 1,2,4	5	Pre-school
Environmental measurement Studies 1,2,4	8	management
The child's gender Studies 1,2,3,4	2	Parents
The child's age in months Studies 1,2,3,4		
Disabkids-Smiley, year 1*	5	
Self-rated parental ability year 1*	6	
Additional questions: - Questionnaire answered by preschool teacher or other staff* - The child's age in months Studies 1,2,3,4 - The child's gender Studies 1,2,3,4 - The child lives with mother, father, etc. - Has the child mother tongue other than Swedish? Studies 1,2,3,4 - The child in need of special support Studies 1,2,3 - Special support for the child, without supervision, describe* - Special support for the child with supervision, describe *	8	Pre-school teacher
Children's Engagement Questionnaire (CEQ) Studies 1,4	29	
Child-Teacher Report Form (C-TRF), year 1 Study 1	25	
Social interaction skills in preschool Study 4	36	
ICF-CY Code sets Study 4	7	
Preschool environment*	17	
Collaboration with parents Study 4	5	
Strengths and Difficulties Questionnaire (SDQ) Studies 1,2,3,4	25	
SDQ question relevance for preschool children, year 1 Study 1	25	
SDQ impairment supplement, impact score (if the child has difficulties) Studies 1,2	8	
Supplementary questions for validation of SDQ, for children aged 1–3 years, and question relevance, year 1 Study 1	8	
Note: * = Question analysed but not included because of non-significant values.		

Preschool environment

This instrument consists of 17 items, scored as: (1) “not true at all” (2) “disagree somewhat” (3) “partly true” (4) “completely true”. The instru-

ment aims to measure different aspects of the physical and social preschool environment. It is based on an instrument developed by Simeonsson, Carlsson, Huntington, McMillen, and Brent (1999) and has previously been used in the project “Young Children’s Health” (Almqvist, 2006), when it showed internal consistency, Cronbach’s alpha between .78 and .84. These questions were analysed in Studies II and IV, but the results are not presented because of non-significant findings.

Additional questions about the child

The preschool teachers also answered questions about the child’s gender, age in months and the following: “The child lives with mother, father, etc.”, “Does the child have a mother tongue other than Swedish?”, “Is the child in need of special support?”, “Is the child given special support with supervision from an external expert?”, “Is the child given special support without supervision from an external expert?” and “The questionnaire answered by preschool teacher or other staff?”

Preschool Manager’s Questionnaire

The preschool manager answered 13 questions about socio-demographics and the preschool environment. Of these, the following were analysed in this thesis: “Number of children in the preschool class entitled to support in their mother tongue?”, “How many children are eligible for special support in the preschool class?”, “How many preschool teachers work in the preschool class?”, “How many children are placed in the preschool class?”, “The number of boys and girls in the preschool class?” and Municipality size.

Disabkids-Smiley instrument, parent-rated (year 1)

The Disabkids-Smiley measure is designed for children aged 4–7 years, and in this study 5 items about the child’s quality of life from Disabkids - Smiley were answered by parents (Disabkids Group, 2018). Disabkids-Smiley is scored on a 5-point smileys scale: (1) “very happy”, (2) “happy”, (3) “okay”, (4) “unhappy”, (5) “very unhappy”. These questions were analysed in Studies II and IV, but the results are not presented because of non-significant findings.

Self-rated parental ability (year 1)

Six items were measured on an 11-point scale, from: (0) “Do not agree”, through (5) “Agree partially”, to (10) “Completely agree”. The items are: “I know I’m good enough as a parent”, “I handle parenting stress as well as other parents”, “I have not managed well as a parent” (turned question), “As a parent, I can handle most things without losing self-control”, “I can

be there for my child” and “My child feels safe when I’m with her/him” (Kendall & Bloomfield, 2005). These questions were analysed in Studies II and IV, but the results are not presented because of non-significant findings.

Data Analysis

Study I

Demographic data are presented with means and standard deviations (SD). Internal consistency was estimated by Cronbach’s alpha and split half. Since the data were skewed, correlation estimates were made using the Spearman correlation coefficient (Spearman rho), and group comparisons were analysed using non-parametric methods (Mann-Whitney, two-sided). A principal component analysis (PCA) with oblique rotation was made to investigate factor structure, since theory predicted that there would be a correlation between the factors. The PCA was conducted on two age groups, 1–3 years and 4–5 years, since the SDQ had previously been validated primarily for the 4–15 years age group. The positive and negative predictive values were calculated along with specificity and sensitivity for SDQ and C-TRF. The data were analysed in SPSS version 22.

Study II

Demographic data are presented with means and standard deviations (SD). Median and cut-offs for the 90th and 10th percentiles of the SDQ are presented with respect to gender. Correlation estimates were made using the Pearson correlation coefficient (r). The Mann Whitney U-test (two-tailed) was used for comparisons between boys and girls. For the graphic longitudinal presentation of SDQ subscales, we used boxplots over three years for the first and third quartiles, medians and means, split by gender. The data were analysed in SPSS version 23.

Study III

Data were analysed using Latent Growth Modelling (LGM) within a Structural Equation Modelling framework using the software IBM SPSS AMOS 23. LGM is mainly applicable because it can model changes in the growth of variables over time, using longitudinal data. LGM models are developed in two steps. The first step (the unconditional model) estimates the growth curve of the measured variable repeated at several time points. More specifically, a baseline value for the first time point (the intercept) is estimated together with the rate of development (the slope). In the second

step (the conditional model), the unconditional model is expanded by introducing time-invariant predictors that can influence the intercept and slope obtained in the first step (Blunch, 2012; Byrne, 2013).

In LGM, the intercept is a constant for each individual across time; hence, the paths from the repeated measures to intercept have fixed values of 1. The slope represents the linear growth, and therefore the paths to slope were fixed at 0, 0.5, and 1 respectively for each repeated measure. Additional model constraints are: equal variance for conduct at all time points and allowing covariance between slope and intercept.

For the missing variables in SDQ subscales, conduct problems (5-item) at 3 time points and hyperactivity (5-item) year one, the AMOS Module for Data Imputation was used with the Regression Imputation Method. The imputation was constrained so that, if any of the 5 items constituting the conduct problems or hyperactivity scale were missing, the imputation was only based on other variables at the same time point. There is no agreed set of fit indices when reporting LGM results, but recommendations suggest using a variety of indices (Jackson, Gillaspay & Purc-Stephenson, 2009).

Study IV

For cluster analyses at each time point, and for the linking of clusters between time points, the statistical package for person-oriented analyses, SLEIPNER 2.1, was used. The cluster solutions were chosen using the following criteria: a maximum number of 15 clusters, a minimum percentage of explained variance (ESS) over 67% before a sharp increase in explained error sums of squares (EESS), an approved homogeneity in the clusters, and a theoretically meaningful and interpretable solution (Bergman, 1998).

Structural stability is obtained when clusters from the different time points are at least partially identical. This means that some clusters remain stable, whereas others dissolve over time and a few new clusters may be formed. Structural stability was assessed by comparing the centroids (= cluster means) between cluster solutions at the three time points (T1–T2, T2–T3). The similarity of the cluster centroids was calculated using the ASED between cluster centroids, and a case was considered a residue, i.e. an outlier, if ASED was > 0.5 . The homogeneity between cluster centroids should preferably be < 1.00 .

For determining individual stability, we followed the LICUR process, as suggested by Bergman et al. (2003), linking clusters after the removal of residue cases. Individual stability denotes the tendency for individuals in a specific cluster to show a similar pattern over time. This was done by using the EXACON module in SLEIPNER (Bergman & El-Khoury, 2002), for

single-cell contingency analysis. The probability of individual stability is higher between highly matched clusters, i.e. when the structural stability is high. However, it is not certain that all children will follow a pathway with high structural stability. Pathways that included significantly more individuals than expected by chance are considered a typical pathway (Bergman et al., 2003) and form the basis for comparative analyses in this study. The typical pathways were compared concerning both categorical and continuous risk and protective factors. For categorical variables, we used cross-tabulation with Fisher's Exact Test to compare types regarding the children's gender. For continuous variables, we used one-way analysis of variance followed by Tukey's B Post Hoc Test to investigate typical pathways regarding the children's personal characteristics: age, developmental delay, emotional problems, peer problems and prosocial behaviour, as well as the preschool environmental variables: collaboration with parents, percentage of children with other mother tongue in the group, number of children/teachers, how well the teachers responded to the child and how other children interacted with the child.

Ethical Issues

This study is one of several sub-studies in the longitudinal project TUTI (Granlund et al., 2016). All the sub-studies were planned in advance and were approved by the Regional Ethical Review Board in Linköping (Dnr 2012/199-31). Preschool management, preschool teachers and both parents of all the children provided written informed consent. Both preschool teachers and parents were informed that it was voluntary to participate in the study, that it was possible to withdraw their informed consent at any time during the course of the study and that they could do so without stating a reason for their decision to withdraw. Following the Ethics Committee's recommendations, the letter of formal notice sent to parents contained information explaining that the preschool teachers would be answering a number of sets of questionnaires covering different subject areas. All questionnaires were duly coded with the coding key, separated and kept in a different location after data collection. A potential ethical dilemma which could arise would be if the preschool teachers, through using the project instruments, were able to identify or detect difficulties in individual children which had previously gone undetected. Should this occur during the course of the study, the preschools were instructed to follow standard norms and procedures for children of this age who are deemed in need of special support, as well as referring them to Child Healthcare for support.

The Ethics Committee initially questioned the possible dual role of the preschool teachers involved; that is, as ordinary educators and caregivers who within the framework of the project would be assessing the child based on the included questionnaires in much the same way as a “psychiatric diagnostician”. According to the Swedish National Agency for Education (1998/2010), preschool teachers should aim towards a holistic view of the child as well as providing a good level of care in order to benefit both development and learning. The physical and mental development of individual children should also be given attention and extra care should be provided for those children who require a greater amount of support or have special needs. In order to do this, knowledge regarding each child was needed, such as their capabilities and experiences. However, this was not carried out simply in order to judge the child’s performance in any way. No diagnosis was forthcoming either and there were no expectations regarding the child’s level of knowledge or adherence to norm values. No behavioural comparisons with other children were made either. Thus, answering the questionnaires provided in the study did not deviate substantially from the duty of preschool teachers in general as per the Preschool Act; that is, as set down in law. The questionnaires were seen as tools which allowed the strengths and difficulties of each individual child to be captured structurally. They also facilitated the planning of an activity through which the school is instrumental in providing the children with all the conditions required to succeed.

Work methodology for staff requires that they can clearly state how they proceed in capturing the strengths and difficulties of the individual child, and they are also expected to develop the level of quality in preschools (Swedish National Agency for Education, 1998/2010). The outcome of this project can therefore provide a clear structure for how to address strengths and weaknesses, thus reducing the likelihood that children will be judged in an arbitrary way or that diagnosed children will be stigmatised. The Ethics Committee thus accepted our arguments and approved the study protocol.

According to the Swedish National Agency for Education (2010) §4, the parents of children in preschool should continuously be given progress reports about their child’s development. Parents who took part in the studies included in this thesis felt that the teacher responded in a more systematic way to their child’s strengths and difficulties and discussed them with the parents. The teachers likewise commented on the way in which the questions that were answered in the project supported them in their cooperation with the parents. Here, it should be emphasised that no questionnaires from the project were actually used in the conversations with parents, but they did ensure that the staff felt that they had a structure around which to build the conversation.

RESULTS

Study I

Almost all of the 25 SDQ items were considered relevant and easy to use with preschool children: in the age range 1–3 years 94%, and in the range 4–5 years 97%. The items that were judged least relevant included questions requiring that the child's language was adequately developed and that they possessed the ability to see and understand others' need for support. Internal consistency and validity of the SDQ were found to be satisfactory. An acceptable level of sensitivity was found for all the included scales for both age groups. Specificity on the other hand was low, which indicates that the SDQ cannot be viewed as a diagnostic instrument in itself.

Younger preschool children, 1–3 years of age

For the younger children (aged 1–3 years), only the subscales Hyperactivity and Conduct Problems were deemed valid by the PCA, and preschool teachers were able to reliably code them: the reliability of these subscales was thus found to be good. The Emotional and Peer Problem subscales, however, did not aggregate into two distinct subscales.

Both the total and subscale scores of Hyperactivity and Conduct Problems correlated well with the additional questions in the supplement (C-TRF) and negatively with the Prosocial Scale and CEQ. This in itself can be seen as an argument for the validity of the SDQ as a screening instrument in this setting.

The subscales Hyperactivity and Conduct Problems, together with the Peer Problems subscale, also differentiated between the normal sample and those children previously identified as having problems. This, however, was not the case for the subscale Emotional Problems.

Older preschool children, 4–5 years of age

Reasonable results were found for the four original SDQ subscales in the older age group (4–5 years). For this age group, the version of the SDQ for teachers and parents has been previously validated. A decision was therefore made to do a PCA with four factors, as in the original work by Goodman (2016). The result was not fully conclusive. The Hyperactivity and Conduct Problem subscales showed a pattern similar to the original validation. However, the results loaded in a mixed way on factors 3 and 4 for

the items included in the original subscales Emotional and Peer Problems. That said, the total score correlated well with the supplementary questions in the C-TRF and CEQ.

The total score and the scores for the subscales Conduct Problems, Hyperactivity, Peer Problems and Prosocial scale were also successful in differentiating the children identified as having problems from the “normal” sample. This, however, was not the case for the subscale Emotional Problems.

Study II

Medians, ranges and cut-offs for the 90th percentile (10th percentile on the Prosocial scale) are presented in Table 6.

Based on the results of this study, when teachers scored children in Swedish preschools, a rating of 12 on the SDQ Total Problems Scale is recommended as a cut-off.

Table 6. Medians, ranges and cut-offs in accordance with 90th percentiles (10th percentile on the prosocial scale), on subscales and the total difficulties scale. There are different numbers of participants (1–5 years of age) for boys (n=420–424) and girls (n=386–391) on the different subscales. The Mann Whitney U-test (two-tailed) was used for comparisons between boys and girls.

	Boys N=420- 424		Girls N=386 -391				Gender diff. p
	Median	Range	Median	Range	Cut-off Sweden	Cut-off UK	
Prosocial	6	0–10	7	0–10	3	4	<.001
Emotional Problems	0	0–7	0	0–6	3	3	.153
Conduct Problems	1	0–10	1	0–9	4	3	.017
Hyper- activity	2	0–10	2	0–10	5	5–6	<.001
Peer problems	1	0–8	1	0–8	4	3–4	.013
Total Pro- blems Scale	6	0–25	5	0–24	12	11–14	.003

Boys were reported to have significantly more problems than girls on the entire scale, and on all subscales except for the Emotional subscale. Boys were also considered to have significantly lower Prosocial skills than girls (see Table 6).

Children with first languages other than Swedish, i.e. born to immigrant parents, scored lower on the Prosocial scale, whereas they had higher ratings on the Peer problems subscale.

Children viewed by teachers as problematic in the preschool group, and therefore considered to be in need of special support, had significantly higher ratings on the whole scale, as well as on all the SDQ subscales, with the exception of the Emotional scale.

Endorsement Rates on the SDQ Impact Supplement

Preschool teachers answered yes in 139 cases (17%) in answer to the question: “Overall, do you think that this child has difficulties in one or more of the following areas: emotions, concentration, behaviour or being able to get on with other people?” This indicates that these children had difficulties that were apparent in everyday life (Goodman, 2016). Children with high scores on the SDQ Total Problem Scale also had higher scores on the Impact Supplement Scale.

Longitudinal analysis of the SDQ Subscales

Prosocial behaviour increased over time (Figure 5). Girls were consistently estimated as having fewer problems than boys. Conduct Problems increased with age. By time point 3, however, both Hyperactivity and Conduct Problems had dropped quite markedly. Emotional problems were consistently rated low, not showing any particular developmental pattern over time.

Figure 5. Box plots of the SDQ subscales as shown longitudinally over three years for 195 children, split by gender (boys in red). The boxes mark the 25th and 75th percentile and the whiskers mark the highest/lowest value within 1.5 of the interquartile range from the box. The mean is marked with a rhombus, the median with a horizontal line and the 90th percentile cut-offs with a solid black line.

Study III

Conduct problems decreased over time. Hyperactivity at time point 1 was linked to both the intercept and the slope ($\beta = -0.37$) of Conduct problems. More Hyperactivity at time point 1 was linked to both a smaller decline in Conduct problems and a higher initial level of Conduct problems.

Gender was a significant predictor for the slope of Conduct problems ($\beta = -0.25$), with boys having less decline than girls (see Figure 6).

Figure 6. Conditional model for Conduct problems over three years with Hyperactivity and gender at year one as time-invariant predictors showing that Hyperactivity affects both intercept and slope, and gender affects the slope.

Study IV

Several clusters had high structural stability over time, i.e. similar cluster patterns emerged at each time point. Longitudinal trajectories between cluster patterns of engagement, social interaction, hyperactivity and conduct problems were analysed for typical pathways, defined as those occurring more frequently than by chance. Significant typical pathways were primarily seen at the extreme ends of the continuum, i.e. pathways between clusters of children with good functioning and pathways between clusters of children with large difficulties in functioning (Figure 7).

Individual and environmental protective and risk indicators in the typical pathways are presented in Figure 8. Stability was related to the existence of a larger number of protective or risk indicators respectively. Children not following specific pathways tended to have moderate levels of protective and risk indicators.

Note: Sig. * $p < .05$, ** $p < .01$, and *** $p < .001$. Numbers attached to the arrows indicate number of children and how many times more the flow was observed as compared to what would be expected. 0 = equal to or 0.5 SD above/below total mean, +/- = 0.5–1 SD above/below total mean, ++/-- = 1–1.5 SD above/below total mean, +++/--- = 1.5–2 SD above/below total mean, ++++/----- = 2–2.5 SD above/below total mean.

Figure 7. Significant typical pathways (→) between clusters years 1-2 and between years 2-3. (For larger image of Figure 7-8, please see end of thesis).

Figure 8. Number of protective and risk indicators for each typical pathway.

GENERAL DISCUSSION

Summary of Findings

The purpose of this thesis was to evaluate the screening of mental health among preschool children and to describe patterns and pathways of behavioural problems. The results reveal that hyperactivity and conduct problems, i.e. behavioural problems, were the most apparent, while emotional problems were more difficult to detect in the preschool setting.

The SDQ Hyperactivity and Conduct Problems subscales were considered to be valid for children aged 1–3 years. For the age group 4–5 years, the whole original SDQ scale showed validity. A Swedish cut-off for the SDQ for preschool children, as rated by preschool teachers, was presented.

Children with more initial hyperactivity exhibit less reduction in conduct problems over time, i.e. the more hyperactivity early in life, the more conduct problems later on. Children high in engagement and social interaction function well, even in the presence of hyperactivity, while children with low engagement and interaction, alone or in combination with exhibiting hyperactivity and conduct problems, continue to have problems. In summary, the SDQ can be used by preschool teachers to identify preschool children at risk of mental health problems later in life.

Findings

Preschool Teachers Can Identify Behavioural Problems among Preschool Children

The findings of this thesis indicate that the teacher version of the SDQ is a reliable and valid instrument for identifying early signs of behavioural and emotional problems in young children and is therefore suitable for preschool teachers to use with 1–5-year-olds.

The preschool teachers commented that using the SDQ enabled them to be aware of and understand the child's behaviour at an earlier stage. They also found it easier to communicate their concerns to parents, something that may potentially contribute to earlier detection and help for children who need special support.

The preschool teachers regarded the SDQ questions as mostly relevant, indicating that the items concerned behaviours in preschool children with

which they were familiar. Questions about language and empathetic ability were considered least relevant, which may have to do with the fact that the SDQ was originally designed for children 4 years of age and upwards, when development has come further in these areas and can therefore be more easily assessed (Berk, 2013; Goodman, 1997).

Looking at the different SDQ items in Study I, more prosocial behaviour and fewer behavioural problems are reported as the child grows older and becomes more mature, with the exception of the period between 2 and 3 years of age, which is probably related to normal developmental steps, including an obstinate age (Berk, 2013). At all ages, children received low ratings on items describing emotional problems. There is a problem in defining typical and normal development and mental health: we all have some traits or characteristics that can also feature as “part of a diagnosis”, this is an inherent part of the human condition. Rather, there appears to be a continuum between the normal and the abnormal. It may be a dilemma at the preschool stage to distinguish what can pass as normal and what to respond to as mental health problems. Context and environment affect behaviour and in research we can describe normality at a group level. At the individual level, normality depends on the requirements set, and deviation occurs when the requirements become too great.

In Study II, in terms of the total scale, the proposed cut-off in this thesis is similar to the 11–14 rating score proposed by Goodman (2016). The cut-offs on the various subscales in our sample generally match well with UK norms. Based on the sample studied here, the proposed Swedish SDQ 90 percentile norms are also similar to those employed in other European countries. The only exception is the Prosocial subscale in which the cut-off was lower, and the Conduct Problem subscale, where it was higher, with Swedish children being estimated to have more problems. There appear to be some cultural differences in behaviour, or in how preschool teachers already estimate behaviour at preschool age. According to work conducted by Ortuño-Sierra et al. (2015), various modifications of the present SDQ scales could be required if emotional and behavioural problems are to be screened in different European countries. It is difficult to comment upon differences around the world in general as the SDQ has been mostly studied and used in Europe and Australia (Borg et al., 2012; Warnick, Bracken & Kasl, 2008).

Parents’ and teachers’ ratings of child behaviours often show discrepancies. In general, Swedish, Finnish and Norwegian parents seem to estimate children’s behavioural problems as lower than parents in other (Anglo-Saxon) countries. The difference could lie in the parents’ frame of reference rather than in actual differences in the behaviour of the children themselves. It may be the case that some Nordic parents are more tolerant and place fewer demands on their children, as a cultural factor

(Achenbach & Rescorla, 2007; Borg, Kaukonen, Joukamaa & Tamminen, 2014; Heiervang et al., 2008). As a comparison, Swiss parents score a total SDQ that is lower for their 2–6-year-olds than the Swedish preschool teachers in this study (Stülz et al., 2018). A study in Taiwan with both clinical and community samples shows that discrepancies between parents' and preschool teachers' ratings can be correlated with parenting stress. Scores reported by parents were higher for each of the inattention, hyperactivity/impulsivity, ODD, and internalising behaviour symptoms examined than those reported by teachers (Chen et al., 2017). This reinforces the idea that it is good to combine teacher and parent estimations for children with both internalising and externalising problems.

In a study by Warnick et al. (2008), the SDQ showed a good ability to properly classify children aged 5–18 years who did not have general mental health problems, yielding a specificity of 93%. The sensitivity and specificity of assessment methods were the same in both clinical populations and general populations. In Study I, the total scales showed a high level of sensitivity, which indicates good accuracy for a screening instrument. However, specificity was low, which means that the SDQ in its present form cannot be regarded as a diagnostic instrument. Still, the clinical sample could be differentiated from the general sample with significantly higher scores on the total SDQ and the subscales for Conduct Problems, Hyperactivity and Peer Problems scores, but not on the subscale for Emotional Problems. The Prosocial scale showed significantly lower scores in the clinical sample compared to the general sample in the age group 4–5 years. Also, children who were considered to be in need of special support, i.e. who were seen as problematic in the preschool group, had significantly higher ratings on the whole scale and on all the SDQ subscales, except for the Emotional subscale. Thus, the SDQ can be used for screening and identifying children with psychiatric symptoms early in life. This may also indicate that children identified with problems are identified mostly as a result of externalising behavioural problems and peer problems that disturb the preschool class.

Boys were reported to have significantly more problems than girls across the entire scale, and this applied even to all the subscales, with the exception of the Emotional subscale. Boys were also considered to have significantly lower prosocial skills than girls. Thus, gender differences reflected in older children appear to be already present at preschool age. Gender differences such as these have also been found in other studies (Klein et al., 2013; Nock et al., 2007; Ravens-Sieberer et al., 2008; Smedje et al., 1999). This may be an indication that different cut-off limits should be used for each gender. The question arises: at what age do children learn their "gender" roles? Gender differences can be observed in a number of

different areas of child development (Martin & Ruble, 2010; Swedish National Agency for Education, 2018a). In this thesis, both the terms gender and sex are used in the study, although gender is a justified aspect even in 1–5-year-olds. Also, from a gender perspective, one may ask how the scoring of children is affected. Øvergaard et al. (2018) show that the SDQ Hyperactivity subscale scored by preschool teachers was useful only in screening girls. A large proportion of preschool teachers are women (96%), and here the question is how a predominantly female corps of preschool teachers may influence functioning and behaviour differently in girls and boys. For example, what do female as opposed to male teachers think about activity versus hyperactivity, what is “normal” and what is scored as being “different” for a girl and for a boy? It may be the case that different types of games and/or activities may be encouraged to a greater or lesser extent by male and female teachers. This could potentially affect how well children react and adapt to these activities. Furthermore, girls and boys may in turn indeed react to the activities themselves in different ways. Also, in other areas outside the preschool environment, such as healthcare, where the child is “assessed”, they usually come into contact with women. This too is an issue which warrants further investigation.

Externalising Problems in Preschool Children

Children of preschool age can be recognised as having early symptoms of ADHD, ODD or CD if they frequently exhibit inattention, hyperactivity, impulsivity or aggression (Spira & Fischel, 2005), although they might not have been given a formal diagnosis. In this thesis, I have therefore chosen to refer to these symptoms as “problems” in the SDQ subscales for Hyperactivity and Conduct Problems, rather than “disorders” of externalising behaviours.

Hyperactivity is to a large degree a functional impairment, while conduct problems develop over time as a result of the interaction between predisposing characteristics such as hyperactivity and contextual influences (Harvey et al., 2016; Nijmeijer et al., 2008). In Study II, we can see longitudinally that conduct problems decrease in preschool children over time. However, the results of Study III show that a higher score on hyperactivity at time point one is linked to both a higher initial level of conduct problems and a smaller decline in the extent of conduct problems over time, with boys generally showing a lesser decline in conduct problems than girls. This is consistent with other studies, where older children with ADHD and comorbid disorders have been found to have greater difficulties with functioning, as well as exhibiting more impairments compared to those who have no comorbid disorders related to their diagnosis of ADHD (Hinshaw & Melnick, 1995). A more recent study examining a large population-based sample of 3 1/2-year-old children with ADHD

symptoms found that this population had concurrent ODD more often than CD. At the same time, having ADHD symptoms increased the risk of CD by a factor of more than two compared to the likelihood of comorbid ODD (Bendiksen et al., 2017). This is consistent with other studies, indicating that hyperactivity is linked to additional conduct problems later on, and that CD is a disorder with later childhood onset compared to ODD (Taylor et al., 1996). Meta-analysis results from Moreland and Dumas (2008) demonstrate that disruptive behavioural problems can be identified as early as age 3, and that disruptiveness is stable over time. It appears that these children need support early on in order to reduce suffering later in life. This thesis shows that preschool teachers can adequately screen out children with hyperactivity and/or conduct problems by means of the SDQ.

In Study IV, children high in engagement and interaction function well, even in the presence of hyperactivity, while children with low engagement and interaction alone or in combination with exhibiting hyperactivity and conduct problems continue to have problems over time. Hyperactivity may be a strength unless you have impulsiveness at the same time. This also seems to depend on whether the child is frequently engaged in social interaction with peers, and gets the right adult response. On the other hand, early identification of preschool children with hyperactivity in combination with impulsiveness may make it possible to identify children who may later be diagnosed with ADHD (Lahey, Pelham, Loney, Lee & Willcutt, 2005), thus locating children who need early support, such as social skills support, in order to reduce the negative development of disruptive behaviour later on. Lavigne et al. (1998) showed that as many as 50% of 2- to 3-year-old preschool children with disruptive behavioural symptoms receive a diagnosis 42–48 months later.

In this thesis, the scores of Hyperactivity and Conduct Problems decreased at a constant pace over time in preschool children, at least according to the preschool teachers' reports. It is sometimes assumed that increased demands from the environment in the school-age group compared to preschool are the reason for the greater prevalence of diagnoses in older, school-aged children. The connection between hyperactivity and conduct problems has been studied in previous research, with special emphasis placed on symptoms in a clinical sample which may be experienced in both childhood and adolescence (Burke et al., 2005). It is worthy of note that those younger than 10 years of age more frequently receive an ODD diagnosis, whilst those who are 11 or older are more likely to be diagnosed with CD (NICE, 2018). Diamantopoulou, Verhulst, and Van der Ende (2011) claim that there is no connection between ODD and CD. However, this is not an uncontroversial claim: some believe instead that ODD as exhibited in preschool children is a forerunner to CD, leading in

adult life to Antisocial Personality Disorder. This risk of suffering for some young people, adults and their families indicates that early detection of conduct problems and also in combination with hyperactivity in preschool children is important (National Collaborating Centre for Mental Health, 2013; Rhodes, Park, Seth & Coghill, 2012; Scott, 2007; Vostanis, Meltzer, Goodman & Ford, 2003).

In Study IV, the children in pathways with high behavioural problems showed more developmental delay than the total sample. Preschool children with disruptive behaviour also have a higher probability of developmental delay than the overall population, suggesting that developmental screening is important for these children (Szczepaniak, McHenry, Nutakki, Bauer & Downs, 2013). When looking into the issue of the child's temperament, it has been observed that a "difficult" temperament in small children can later manifest as frustration or aggressiveness. Difficulties with impulse control at preschool age constitute an inherent vulnerability to the development of later behavioural problems, such as hyperactivity and attention disturbances (Kerner auch Koerner, Gust & Petermann, 2018). Congenital temperamental traits affect continued development differently, depending on how well the context succeeds in responding to the child in the microsystem (Guerin, Gottfried & Thomas, 1997; Shiner & Masten, 2012).

Internalising problems

The subscale Emotional Problems in the SDQ describes the child's reactions in terms of psychosomatic symptoms as well as emotions, such as stomach aches, worries, unhappiness, nervousness and fears. All of these can be difficult for the teacher to detect in a young child. The SDQ Emotional items were not found to aggregate into a distinct subscale in Study I for those children aged 1–3 years. It might be that emotional problems in young children manifest in other ways than those listed in the SDQ Emotional Subscale, or present a more diverse picture, or that emotional behaviours such as being worried, unhappy or nervous, plus a number of fears are still regarded as being "normal" in young children. Since a number of the children in this age group have presumably only just started preschool, as newcomers they are quite likely to feel sad and at a loss. Since young children's verbal skills are not particularly well developed, it might be difficult to understand the child's nervousness or fears, which may manifest together with complaints of headaches and stomach ache. The items on the Emotional Scale are rated low, not showing any developmental pattern over time. There is probably also strong cultural conditioning determining how feelings are expressed in both children and adults. The problem of detecting emotional problems persists even up to

school age and beyond, where for example sad teens, often girls, are discovered at a later stage, at least when compared to those schoolchildren who exhibit externalising behaviour (Brody, 1985). It has also proved difficult to find evidence of depression in children and adolescents (5–18 years) using screening instruments such as the SDQ (Williams, O'Connor, Eder & Whitlock, 2009). On the other hand, Blom, Larsson, Serlachius, and Ingvar (2010) argue that the SDQ Emotional Scale can screen out depression in schoolchildren. And there are also researchers who have detected emotional problems with a prevalence of 12–18% in European children aged 0–6 years, (Furniss et al., 2006; Skovgaard et al., 2008; Wichstrøm et al., 2012). This may illustrate that sufficient knowledge about emotional symptoms related to maturity exists to find emotional problems among preschool children.

In Study IV, the children in pathways with the highest SDQ scores for Emotional Problems also showed most developmental delay, peer problems and low prosocial strength engagement and social interaction. They also had the lowest response from teachers and lowest interaction from other children. This was a pathway with many risk indicators and a great need for support in social skills, bodily functioning, cognition and language. This suggests that emotional problems may be easier to detect if other problems are also detected.

There may be one more way to detect those children who exhibit emotional problems early on, based on their temperament and observation of those children falling into the “slow to warm up” category. Here, a link exists between scared infants becoming shy, and furthermore it has been shown that extremely shy preschool children are at an increased risk of developing anxiety disorders and phobias during school age (Kagan, Reznick & Snidman, 1988). These shy children may be difficult to detect in this study from the results of the SDQ Emotional subscale. It is important to note that far from all children who are shy and cautious at preschool age subsequently go on to develop mental health problems. Help and support in learning to regulate feelings is important during the preschool years in order for continued positive development to take place (Howes & Ritchie, 2002). The interplay between the child's character, context and environment give rise to the development of the child's mental health (Figure 3). The better the child's context succeeds in adapting to the child's characteristics, age-related needs, and providing safe attachment, the less the child's temperament affects their development (Thomas & Chess, 1977). Research on temperament suggests that negative emotionality is a vulnerability factor for the subsequent development of both internalising and externalising problems in the child. If negative emotions are present in a child who is also shy or inhibited, the risk of subsequent inward-facing problems increases (Rhee, Lahey & Waldman, 2015).

Depressive moods and emotional problems in children can also be expressed through externalised problems (temper tantrums, disobedience), and the comorbidity of internalised and externalised problems is high. Depression in preadolescence often exists in comorbidity with ADHD and conduct problems, and in adolescence with oppositional-defiant problems and substance abuse. Even anxiety is found to be comorbid with disruptive behavioural problems and substance abuse in adolescence (Cecil et al., 2018; Lewis & Rudolph, 2014). This comorbidity of internalised and externalised problems is worth investigating even among preschool children. However, it might be that children with internalising problems become frustrated with time and develop externalising behaviour in later childhood. If so, it is important to discover them at preschool age before they “disturb” the day-to-day workings of the preschool class (Almqvist et al., 2018).

Everyday Functioning among Preschool Children

Everyday functioning is defined as the ability to participate in activities in everyday life, to fulfil expected social roles and to interact with people and objects in the different microsystems. Everyday functioning also refers to individual characteristics and adapting to environmental challenges (Bronfenbrenner, 1979; Case-Smith, 1995; Hebbeler & Rooney, 2009; Kielhofner, 2009; Kjellmer et al., 2012). In preschool environments, children have experiences regarding objects, people, places and activities, referred to as “the social context” (Batorowicz, King, Mishra & Missiuna, 2016).

In this thesis, the SDQ Peer Problems subscale was found to be difficult to use with younger children (1–3 years of age). Playing with other children and the development of interpersonal relations are skills that emerge in this age range. Some of these questions, for example: “Generally liked by other children” or “Picked on or bullied by other children”, might also be seen as an indicator of group forces or problems rather than as a characteristic inherent to the child in question. It is probably natural that prosocial capacity has not yet developed in children aged 1–3 in terms of playing with same-age peers and having a best friend. In the child group, it is not clear who is popular and who is not. Children need to master the art of navigating through their social context, characterised by changeability, negotiations and ambiguity, in order to build up and retain a friendship with other children (Berk, 2013; Frønes, 1995; Howes, 2009; Nærde, 2014). Preschool children, especially those with different types of special needs, require “assistance in navigation” from adults in their microsystems. In Study IV, there is one cluster containing children younger than the overall sample with average engagement, social interaction and hyperactivity, and there was no significant typical pathway from this cluster.

These younger children may more commonly move to different clusters, since personal characteristics and the environment affect their development. The child's construct of the self includes the development of both cognitive and social components. In the case of safe attachment, the child feels safe and has the ability to explore the world and interact in context with peers and teachers under safe conditions (Goldberg, 1997; Harter, 2015).

In Study IV, stability in children's developmental paths was quite high with regard to social functioning and behavioural problems during their preschool period. Children who are engaged and regularly interacting with others continue to function well, even in the presence of hyperactivity. Engagement and positive social interaction may thus serve as positive indicators, decreasing the influence of hyperactivity on functioning. The most frequently occurring typical pathway was characterised by children with high levels of engagement and social interaction without behavioural problems, indicating good mental health in most preschool children. Engagement is known to be a strong predictor of both learning (Fuhs et al., 2013) and wellbeing (Aydogan, 2012), and works through enhancing self-regulation.

In Study IV, children with comorbid difficulties, both hyperactivity and conduct problems, have lower engagement, social interaction and prosocial skills and more peer problems that affect everyday functioning. These children's engagement also decreased over time and children with behavioural problems frequently sustain only low-complexity social interactions and do not develop in their engagement (Rimm-Kaufman, Pianta, & Cox, 2000). Other studies show that not being able to take turns or wait for a response before moving on to another activity causes irritation, and hyperactive children tend to be left out of peer activities and receive less attention from preschool teachers (except for when they disturb group activities) (Buhs et al., 2006; Bulotsky-Shearer & Fantuzzo, 2011). Over time, such negative interactions may express themselves as problems with following instructions and staying in positive play interactions with peers. Children who receive more negative attention from teachers tend to have more problems with emotional regulation, concentration and disruptive behaviours in general (Reinke, Herman, & Newcomer, 2016). This may indeed be one pathway whereby children with hyperactivity develop a greater number of conduct problems later on (Nijmeijer et al., 2008). On the other hand, it was shown in another analysis of the TUTI data set that functional interaction with peers and preschool teachers indicates that the negative relationship between hyperactivity and engagement can be modified by enhancing interaction with others in preschool (Granlund et al., 2016; Sjöman et al., 2016).

Children with first languages other than Swedish, i.e. born to immigrant parents, showed tendencies, in Study IV's analysis of the SDQ, towards

lower Prosocial ratings and higher ratings on the subscale Peer problems. It might be that these children have an underlying problem with interpersonal communication which needs to be overcome, and is reflected in these specific subscales. Children with Swedish as their first language may also communicate less with “immigrant children”. Children may choose to communicate with peers who are easier and stronger communicators. The children need active educators who give them support and attention to develop their language (Berk, 2013; Howes, Sanders, & Lee, 2008). The scores for Peer Problems and Conduct Problems developed in a similar pattern over time, indicating a connection between these two problem areas. This highlights the importance of supporting the child’s peer interactions and prosocial skills in both promotion and prevention work, at the universal, selective and indicated levels. However, the proportion of children with other mother tongue than Swedish in the group may also affect how children’s behaviour problems are perceived and dealt with. Maybe behaviour problems and functioning are primarily explained by teachers in these groups as being caused by language problems and therefore no support is needed and that the situation will improve with time. The stability in behaviour problems seen in the present study dispute this reasoning. Other explanations might be related to differences in socioeconomic status between groups, differences in children’s mental health and parenthood in different ethnic groups (Williams & Collins, 1995) as well as differences in what is considered to be a special need in relation to other children in the same group (Sandberg et al., 2010).

In Study II, the prevalence of prosocial behaviour was rated lower than in other European countries. Heiervang et al. (2008) showed that, when comparing Norwegian to European children, less prosocial behaviour was found in Nordic school-age children. A greater level of disruptive behaviour in Swedish compared to British preschools may reflect a setting which allows more free play, and has a smaller number of organised situations. Swedish children in general also spend more time in free play outdoors than in other European countries. This opportunity for free play, both indoors and outdoors, can be good for children with hyperactivity, who have difficulty sitting still. Being in a free-play environment for a long time, however, places more demands on children who are not good at organising their time and activities. Children with conduct problems can also end up in trouble with peers during free play, and the teacher needs to be close to the child in order to monitor and endorse behaviour. On the other hand, talking about demands from the environment in other countries, more structured environments are suggested in order to place more demands on children, such as sitting still for long periods, focusing on certain tasks and developing academic skills. This can lead to more disruptive behaviours being noticed by teachers when these demands are

high and it becomes hard for children to follow high expectations and many rules (Engdahl, 2011; Montie et al., 2006). Here, the Swedish curriculum supports the child through individual, adapted, safe care and an inclusive approach (Swedish National Agency for Education, 1998/2010). In Study IV, the children in pathways with most developmental delay also attracted the highest scores in emotional and peer problems and low pro-social behaviour. They also received the lowest response from teachers and lowest interaction from other children. This is a surprising finding since developmental delay in bodily functioning, cognition and language are often highlighted in special support. These problems together may also affect children's functioning across an array of everyday activities (Andersson et al., 2016; Lewis, 2011; Prior et al., 2011). These pathways may also include children with symptoms of ASD. In this study, we have not screened for ASD, since our questionnaires were not appropriate for doing so. It is important to identify ASD early in order to facilitate the right interventions for interaction and communication skills in time, both in preschool and at home (Billstedt et al., 2005; Carr et al., 1994; Devescovi et al., 2016; Spjut Jansson et al., 2016). In this thesis, I have also not investigated the mental health aspects of reduced physical functioning, or the physical health of the child, such as pain, healthcare visits, medicine intake and situations in which the child may feel different and/or not be able to function in the same way as their peers (Timmons et al., 2012). However, there is a need for greater focus on functioning and behavioural problems when identifying young children's mental health problems, in relation to primarily focusing on a diagnosis (Augustine et al., 2018; WHO, 2007). Children's absence of engagement in preschool cannot be explained by diagnoses or disability (Simeonsson, 2006). The ICF-CY Core Sets can be used to highlight functioning and the activities of daily living in assessment of such aspects as ADHD symptoms (Bölte et al., 2018b), both across the lifespan and in different environments, including preschool, clinical and research settings.

Phillips and Shonkoff (2000) show several different perspectives on functioning and development as overarching themes. Society is changing, and thus the demands on the children's functioning are also changing. Early childhood science, policy and practice do not always address the needs of young children, and demand dramatic rethinking. The preschool child has several "developmental tasks to solve", such as attaching "basic trust" to one or more carers, communication/language, spending time with peers, maintaining self-esteem, being able to follow rules and handle emotional regulation. In this, there are also critical developmental periods that the child will go through. All of this occurs with the help of adults and under the influence of heritage and environment (Bowlby, 2012; Erikson, 1977; Hensch, 2004; Rhee et al., 2015).

Risk and Protective Factors

In this thesis, children's mental health, development and functioning are conceptualised as related to both protective and risk indicators in the biological prerequisites and the environment (Figure 3). In Study IV, children with high levels of engagement and social interaction with teachers and peers, and with low levels of behavioural problems, were associated with several protective indicators and few risk indicators, something that has also been reported by Wille, Bettge, Wittchen & Ravens-Sieberer, 2008. It is likely that children with high engagement develop good social interaction with peers and teachers and this in turn is a protective factor, generating positive spirals of good mental health (Aydogan, 2012; Hughes et al., 2014).

The children in Study IV who show low engagement and low social interaction alone, or in combination with behavioural problems, have fewer protective indicators and several risk indicators. This pattern has also emerged in other studies, where few protective and several risk indicators in both the environment and personal characteristics covary with less positive prognoses for mental health (Aguar & McWilliam, 2013; Galéra et al., 2011; Wille, Bettge, Wittchen & Ravens-Sieberer, 2008; Willoughby, Pek, Greenberg & Investigators, 2012). At preschool age, an interplay between genes and environmental factors can be identified as both protective and risk factors for behavioural problems (Ogundele, 2018). Due to the fact that children are potentially constantly changing, it is also clear that it is possible to consider many factors in practical work with children, which means that it is possible to influence or do something about the dynamic/changeable factors. In clinical work with individual children, it is possible to influence especially malleable factors, such as interaction patterns and play skills. On the other hand, static factors, like mother's educational level, are more difficult to influence. Children with both high hyperactivity and conduct problems in Study IV show less positive change in prosocial behaviour over time. This may indicate an increased risk of receiving more negative attention from teachers and experiencing more conflicts in relationships with both adults and children. In the long run, social exclusion in pre-school activities may appear (Barkley, 2014; Dodge et al., 2003; Nurmi, 2012; Tremblay, 2010). Early intervention could hinder or reverse this negative trend. However, how and what support is provided is a key issue in interventions for children with behavioural problems. Thus, when making efforts to improve child development, the focus should primarily be on dynamic risk factors. But these efforts also need to be provided with tools and/or strategies for living with good functioning in the context of, for example, developmental delay or ADHD. In one of the pathways in Study IV, the level of hyperactivity increased over time, while the level of conduct problems decreased. These children had moderate levels of both protective and risk indicators, and the level of social interaction increased

over time. Engagement and positive social interaction may thus serve as protective factors, decreasing the influence of hyperactivity on functioning. It might be that good social interaction sustains positive spirals by mutually reinforcing interaction between the child, peers and adults. This highlights the importance of promoting social interaction in preschool, especially for children with high-risk patterns of behaviour.

There is a larger number of risk factors described than protective ones, simply because the main focus of clinical work and research in general has been to identify risk factors. When we define protective factors as something that decreases the probability of a certain negative outcome in the presence of risk, it is clear that the opposite end of the continuum, i.e. absence of risk factors, is not always the same thing as being protective. This means that we cannot simply regard the antonym of risk factors as protective factors. Research often considers positive development in general as the outcome of positive factors, especially when presented as complications in reviews (Andershed & Andershed, 2015).

The child is nested within different microsystems (Bronfenbrenner, 1979), although the family context is not investigated in this thesis. The family emerges as the main protective and risk factor for behavioural problems and mental health problems in preschool children (see Table 1) (Stülz et al., 2018). Numerous elements of risk are, by definition, likely to be experienced by children being raised in sub-optimal circumstances, such as parent trauma in macrotime. It is therefore an important task for well-educated professionals working together with children and parents in the meso and exosystems to strengthen and maximise the protective factors around children, together with targeted evidence-based interventions (see Figure 2). It is important to detect behavioural problems early on. For the children with a high number of risk indicators, more complex interventions are needed to reduce behavioural problems and to provide increased opportunities for positive functioning and development.

Another highlighted risk factor not directly measured in this thesis is psychosocial stress, particularly applying to stressors which exceed the child's capabilities, as well as their ability to handle things such as negative emotions or relationships, fear and being overcrowded (Gunnar, Talge & Herrera, 2009). Stress is related to both the child's vulnerability and environment factors. The environmental factors are dynamic and manageable, and stress can be a maintaining risk factor, causing problems to persist. In preschool, it is worth considering protective factors such as the child feeling safe with the teachers with as few staff changes as possible, small groups, low noise levels and also outdoor play (Gunnar et al., 2010). Preschool provides several protective factors for the child in everyday life.

Early Identification and Intervention

In this thesis, the stability in children's pathways was found to be quite high, both for well-functioning children and for those with more severe behavioural problems. The fact that symptoms and behavioural problems seem to be stable, and have the potential to escalate towards worse mental health problems later in adulthood, indicates the importance of identifying such behaviours in preschool-age children (Caspi et al., 1998; Gillberg, 2010; Skovgaard et al., 2008; Wille, Bettge, Ravens-Sieberer & BELLA study Group, 2008). Early detection requires adequate knowledge about children's development, diagnoses and symptomatology, in order to understand the "warning signals" displayed by young children with symptoms and behavioural problems (Egger & Emde, 2011).

Many have doubted whether it is possible, or even desirable, to classify psychiatric disorders in such young children. There are several reasons for this. First of all, when children are so young, their physical, behavioural and emotional development is rapid, so it can be hard to truly measure and subsequently analyse valid symptoms or clusters of symptoms. Secondly, researchers are apprehensive about the possibility that personal differences in the child's natural development will be incorrectly classified as psychiatric symptoms or disorders and that young children will be incorrectly labelled with a disorder that might shape the child's perception of him/herself, not to mention that of the parents. It is also likely that the problematic behaviour seen in preschool children stems from the child's "normal reactions to abnormal situations" in the environment (Egger & Angold, 2006). There are several factors constituting the aforementioned mechanisms, ranging from innate vulnerability and early relational disturbances, through traumatic experiences and psychosocial stressors, to organic injuries, as well as a combination of causal factors, such as the above in combination with inheritance, context and environment (Cecil et al., 2018; McCrory et al., 2010). This does not reduce the need for detection and intervention; quite the opposite, if there is something wrong in the child's environment, it should be acted upon.

In this case, it is better to screen earlier than to "miss" preschool children with the kind of problems highlighted here. An improved level of knowledge and routines relating to how to proceed in such cases are needed in order to give every child an equal chance of their eventual difficulties being discovered. Children need the kind of universal prevention that targets the whole population, or the whole preschool group. In addition to this, some children also need selective prevention for subgroups in which the risk of developing mental ill health is greater than in the whole population and, in some cases, even indicated prevention aimed specifically at high-risk individuals (Public Health Agency of Sweden, 2016; WHO, 2008).

The SDQ has proven to be an effective tool for screening and can thus be employed when aiming to identify children with mental health problems early in life. Symptoms seem to be stable over time (Skovgaard et al., 2008). Therefore, it is not recommended to “wait and see”. Early intervention is more effective and reduces human suffering (Emde & Wise, 2003). There is also an economic benefit to early detection and intervention into mental health problems in young children (Heckman, 2006; Leach, 2017). A cost-benefit analysis by Heckman (2012), looking at targeted early efforts, showed an economic return of 7–10%, and the earlier the effort, the greater the return. Early detection and intervention for a child with negative biological and/or environmental risk factors will hopefully avoid subjection to experiences which force the child too far towards the negative development line. This child, by means of the opportunity given by early intervention, is also offered increased opportunities to experience new positive events, which may in turn steer the child’s personal growth back towards a more “normal” line of development (Broberg, Almqvist, Risholm Mothander & Tjus, 2015).

Detection, Identification and Intervention in Preschool

In this thesis, it has been shown that preschool teachers can detect behavioural problems using the SDQ. Preschool teachers have experience of many children, they see the interactions between the children and can compare an individual child with other children of the same age in the preschool group. However, most children remain unidentified in terms of a formal diagnosis until school age. Preschool can give children the experiences they need at a relevant developmental level. Swedish preschool seems to be an environment that promotes mental health because of the generally high quality, good teacher education, structured activities and social interactions (Bremberg, 2001). In this thesis, the number of children with high engagement and social interaction increased over time, indicating that children tend to function better in preschool as they get older. Few studies have evaluated interventions in the educational environment focusing on engagement for children (Adair, Ullenhag, Keen, Granlund & Imms, 2015). Engagement is important in both identification and intervention, to see and facilitate how the child in preschool is actively involved in playing, in learning activities by themselves or in the context of social interaction (McWilliam et al., 1992). In applying the PPCT Model to the preschool educational system, the child’s development and learning journey take place over time (Bronfenbrenner & Morris, 2006; Wilder & Lillvist, 2018) with learning, continuity and change being key issues. It requires that parents, preschool staff and professionals collaborate to provide children exhibiting behavioural problems with a functional preschool environment. Every preschool child should be given the

opportunity to develop in preschool, regardless of special needs due to mental, physical, socio-economic or other needs (SFS:2010:800). The current Swedish School Curriculum states that safe care and education should aim to compensate for inequalities at home and in society and be inclusive. This means that the preschool teacher is obliged to give every child the support and safe care required in order to achieve their specific needs (Swedish National Agency for Education, 1998/2010). Van Laere and Vandenbroeck (2018) go one step further and join education and care into a single inseparable concept for pedagogues, so-called “educare”. Safe care is particularly important for children who need extra support and/or are experiencing deficiencies at home. Preschool can compensate by providing the child with a safe pattern of attachment, support in everyday functioning and the ability to trust adults (Meyer & Lavin, 2005). This leads to a safe attachment relating to the child’s construction of the self, in terms of both cognitive and social components. Self-esteem develops positively during childhood; the child feels safe and has the ability to explore the world under safe conditions (Goldberg, 1997). Positive responsiveness from teachers with a climate which is warm and caring, is an excellent form of universal prevention for all children, irrespective of eventual special needs.

In Study IV, preschool teachers tried extensively to find strategies for adapting the preschool environment in order to facilitate individualised support for children with behavioural problems. For example, child to teacher ratios were lower in preschool groups having many children with special needs. In situations where children exhibit behavioural problems and disrupt the group, the most common initiatives in preschool are the teacher staying close to the child, giving individual support (e.g. in play and language), attending to the negative behaviour, and adjusting the preschool environment (Almqvist et al., 2018; Granlund et al., 2016). This type of collaboration requires the preschool teacher to formally identify a child as evoking worry as well as engaging in emotionally demanding discussions with the child’s parents. When diffuse problems are detected by the preschool teacher, it may pose a dilemma about whether or not to inform the parents of children who have a habit of quickly changing their behaviour, or where the underlying cause is unclear, despite the fact that the curriculum states that they should indeed report it (Swedish National Agency for Education, 1998/2010). In Study IV, children with low levels of engagement and social interaction were related to low ratings for collaboration with parents. It would probably be better to engage the parents before the child is formally identified and allowed to receive special support. A Swedish study by Fält et al. (2017) found that preschool teachers wished to identify children with difficulties, and at the same time parents viewed preschool teachers as being competent in their ability to estimate

this type of behaviour in children. However, both preschool teachers and parents wished that there was a more reliable way to assess children's behaviour. Discussing the matter with parents and facilitating early detection could be made easier if, preschool teachers had access to screening questionnaires like the SDQ and the CEQ, in order to conduct a structured assessment of the child's emotional and behavioural problems and mental health in terms of engagement and social interaction. It is not ethical to detect problems, tell the parents about their child's behavioural problems and then wait and see if the child "does well". The reason for early detection is to be able to make an early intervention as in preschool or in the family by means of appropriate healthcare. The teachers can contact the CHC together with the parents, or after consent from the parents, if they notice problems or needs relating to a particular child.

In Study IV, analyses were made of special support with and without supervision, in the different pathways. These analyses did not reveal significant results, maybe because of the small number of preschool children identified as in need of special support. There is no exact information in the curriculum about how to design special support in preschool, it depends on each preschool teacher, the whole preschool's knowledge about the curriculum and the individual child's needs for good development and learning (Sheridan et al., 2011; Swedish National Agency for Education, 1998/2010). Indirect support can take place in the whole preschool group and direct support can be given to the specific child. This direct support can be in collaboration with external support from healthcare services. The inclusion of children with special needs in preschool is also an important task. Group processes and leadership in preschool may ultimately lead to either the inclusion or exclusion of children in need of special support, whilst a process of exclusion may, in the long run at least, negatively influence the child's development and mental health (Fischbein & Österberg, 2003).

In these studies, preschool teachers generally scored children low on the SDQ Emotional subscale, at ages 1–3 years old, even if they were able to identify emotional problems in combination with disruptive behaviour. It seems that teachers react more to externalising behavioural problems that have an impact on the functioning of the whole group (Almqvist et al., 2018). Coplan and Prakash (2003) found that there are primarily two different groups of children who receive more social interaction from the preschool teacher. One is the retired, shy, anxious, non-social children who play alone, and the second is the social, physically active, aggressive children who themselves seek support from the teacher in situations of conflict with peers. Furthermore, experiences of positive social interaction in preschool are a protective factor and therefore instrumental in securing

a child's future well-adapted functioning and development (Sylva, Melhuish, Sammons, Siraj-Blatchford & Taggart, 2010).

In this thesis, there are some children who exhibit persistent and increased hyperactivity and conduct problems over time. Children with externalising problems, a "difficult temperament", frustration and/or aggression need to be understood. Their actions are dependent on environmental factors such as positive "low affective" responses from teachers and parents. They need to succeed at preschool and school, otherwise failure leads to low self-esteem and even more aggression. The actors in the child's context thus need to have this competence so that the child can channel his or her energy into positive and constructive action (Elvén, 2014; SFS:2010:800; Tremblay, 2010).

Interventions included the child, parents, preschool and the whole environment in order to improve the outcome for young children with behavioural problems, and the parents are an important inclusion for the best prognosis (Jones et al., 2010; Petrenko, 2013). In addition, targeted interventions in school and at home for children with both externalising and internalising behavioural problems have proven to be effective in protecting against later abuse, diagnoses and the need for mental health services. A number of interventions with desirable outcomes were staged in the form of, for example, a partnership between family and school, whereby it was hoped that the dialogue between parents and teachers would increase in quality at the same time as the behaviour management strategies used by children would become better, in parallel with parental teaching (Ialongo, Poduska, Werthamer & Kellam, 2001; Ialongo et al., 1999).

Cooperation with Healthcare Services for Early Detection and Intervention

In this thesis, the intention was also to study cooperative factors such as interactions between preschools and health and medical care. However, there were too few answers to be included in the analysis. This may be related to both preschool and healthcare staff feeling that it was very difficult to answer questions about collaboration. However, based on the researcher's conversations with participants, it seems likely that collaboration is so rare, and therefore the questions so abstract, that the questionnaires became difficult to apply to reality. Preschool teachers emphasised the importance of having good cooperation with the CHC in order to handle the situation if children show mental health problems, behavioural problems or special needs. CHC is the first level of healthcare for the preschool child and the CHN works in vigilance nursing to identify possible behavioural problems in the child and in order to predict how this may adversely affect the child's mental health, both now and in the future. The CHN then has the responsibility and opportunity to intervene as long as

they fully understand the potential consequences for the child's and family's future. Health monitoring provides an excellent opportunity to highlight conditions that warrant further investigation in order for the child and their family to be given the necessary support and treatment (Futures & American Academy of Pediatrics, 2008; Meyer & Lavin, 2005). Pre-school teachers see the child in their daily life, and meet the parents almost every day, whereas the CHN meets children on a limited number of occasions, and even then seldom alone, as the children attend the clinic together with their parents. That said, the CHN already has an established contact with families, often with a home visit during the first week after childbirth onwards, together with a number of regular contacts made during the child's first year of life (National Board of Health and Welfare, 2014).

Fält et al. (2017) reported that the quality of health check-ups for 3–5-year-olds in CHC improved when they had SDQ ratings from the pre-school teacher and parents. However, successful implementations of this kind require considerable work at several levels; for example, information sharing, privacy issues, the participation of all parents, and the strain between normative thinking and the notion of preschool teachers helping children who already have developmental problems. There are both laws and guidelines supporting such cross-border work, as long as it protects the child's best interests and the parents give consent for such contact (Sweden County Councils and Regions, 2018). At the same time, this may require education as to the respective functions of each institution in order for the various parties to gain some semblance of understanding about each other's mission. Support for vulnerable families' interactions with social services is also necessary at an early stage (Kling et al., 2010). The Swedish version of the Family Centre may function as a helpful collaborator, especially since many activities are already represented by the institution. An additional advantage of the Family Centre as collaborator is that contact with maternal healthcare has already been established with the parents. One barrier that needs to be surmounted is that the child's preschool is not usually represented at the Family Centre (The Swedish Association to Promote Family Centres, 2014).

Both preschools and CHC need to cooperate with specialist healthcare services for some children with special needs. A specialist consultation in which a team of cooperating professionals from different areas of expertise confer is recommended when ESSENCE symptoms from one or more of the following domains is present for more than six months: general development, motor coordination, perception, communication, activity, impulsivity, attention, social interaction, stereotypical behaviour, emotional regulation, sleep and feeding problems (Gillberg, 2010; Gillberg, 2018).

In summary, preschools and CHC need to cooperate for broad interventions if the child exhibits mental health problems, particularly when so much research highlights the importance of including parents in the intervention (Barlow et al., 2016; Daley et al., 2009; Holland, Malmberg & Peacock 2017; Marklund et al., 2012; O'Brien & Daley, 2011; Oldrup & Vitus, 2011; Petrenko, 2013).

Limitations and Methodological Considerations

The strengths of the study are: a rather large number of children who are representative for Sweden, and who were followed over three years, using well-established rating instruments. There are, however, still a number of limitations: A large number of preschool teachers participated and answered the SDQ in the study but it was not possible to make an evaluation of inter-rater reliability. The descriptive nature of the rating method does not allow for causal interpretations and depends more upon the person's recall and memories of the past. Also, a rather high proportion of parents (59% in year 1) did not give consent for participation, and it is possible that their children had a different symptomatology compared to those who were included.

The initial sample is quite large, but in the longitudinal design a number of children did not participate during all three years. There are several reasons for this: some children left the participating preschool because they were moved to another preschool (the family had moved), and the older children had reached the age of 6 in waves 2 or 3. Some of the departments that initially agreed to take part in the study later withdrew. If the number of children for whom data were available had been greater, it would probably have been possible to investigate a larger number of impact factors in the AMOS model, such as interactions with other children and preschool teachers in Study III. The age spread of the children might also have affected the results; that is, if the number of children included was higher, an analysis could have been performed at the different ages, meaning that the results may ultimately have revealed more significant differences in the analyses. In Study IV, with a larger sample, the percentage of children included in significant typical pathways might have been larger and more protective and risk indicators may have been significant. This study followed the children's behaviour longitudinally, and if any interventions were carried out on the preschools, this was something outside our control and knowledge. The teachers' behaviour may have changed during the period when the researchers were visiting the preschool: measurements were made on several rating variables on a regular

basis for three years. Preschool teachers spread the word about the research at parents' meetings, which may in turn have increased parents' expectations, but in all probability there was a large variation between preschools.

The questionnaires that were used pertained to the teachers' education, experience and how long they had known each particular child, and the answers here were incomplete. This is a limitation since we know that 30% of preschool staff lack specialist education to work with children (Swedish National Agency for Education, 2018a). The aim was to study preschool teachers' screening and understanding of children's mental health. Because of this, we have no knowledge about how staff without preschool professional education would answer the questions.

This probably plays a part in the quality of the answers given to the questionnaires about the children's behaviour. If there had been an opportunity to interview the teachers about the above and, for example, care and support in preschool, then this may have given us an opportunity to highlight a number of dimensions not contained here, plus a deeper insight into those already included.

Another limitation is that only preschool teachers rated the children, instead of also including the parents. The entire study is based on preschool teachers' perceptions of the child in the preschool environment. The use of proxy informants when assessing children is a well-known problem, especially when it comes to emotional problems. Teachers often miss these symptoms even in school-age children (Smedje et al., 1999). It can also be difficult for the preschool teacher to screen a child's developmental age in mixed age groups, and when children with different problems are present together in the preschool group. Teachers themselves also assessed their own interactions and interventions with the children. Here, a comparison with ratings made by parents could have been helpful (Ezpeleta, Granero, de la Osa, Penelo & Domènech, 2013).

Direct observation of the children by a researcher present at the preschool could also have been of value. Possibilities for including the children's opinions and answers should also be considered; an interview with image support, for example, could have shed light on the child's behaviour in a valuable way. In this study, teachers assessed engagement and what they believe it is important to engage in, such as learning. Still, it is not easy to get reliable information directly from a young child, and thus to a large extent we have to rely on proxy reporters.

There are also some limitations in the SDQ with 25 questions that it takes 3–10 minutes to answer. Each question has only three answer options, but five questions in each subscale are weighed together into one "continuum" or subscale. The Hyperactivity subscale contains three questions

about hyperactivity and two about ability to concentrate. In the Peer Problems subscale, two items of the five examine the peers, rather than the child under observation: if they bullied the child or liked the child. The SDQ can also invite teachers to think about problems rather than strengths within the child. This is suggested by the fact that it is important to identify children with problems early. In relation to this, it may be useful to screen using the SDQ together with some more “strength-oriented” questionnaires, such as the CEQ to measure engagement.

Another limitation is that family factors and socio-economic status are not included in this study, even though they are the most important risk or protective factors for behavioural problems (Stülz et al., 2018). This was discussed in the research group during the design of the project. A balance was then struck between how much data could be collected, and how many and how sensitive the questions could be when asked of parents before the number participating would decrease. Parents responded to six questions about their parenting (Kendall & Bloomfield, 2005) and five questions about the child’s quality of life (Disabkids Group, 2018). These variables were analysed but were not used in this thesis due to the lack of significant results. Qualitative interviews with parents could have been a good complement.

Family factors, such as the parents’ attachment style patterns, were asked about in the clinical sample. A shortcoming here is that the number of children became so few in the end that this material could not be accurately analysed. In the clinical sample, environmental and cooperation factors such as interactions between preschool and healthcare and medical care were also included, but the answers were too few to be analysed.

Clinical Implications

Some clinical implications and recommendations can be extracted based on the results of this thesis. The SDQ can be used by the preschool teacher to identify preschool children with emotional and behavioural problems, and it can also be used in clinical health practice, but then the focus is more on mental health problems. The frequencies of emotional and behavioural problems in preschool children (aged 1–3 years) and the cut-off for the total SDQ and respective subscales have now also been established.

Based on this thesis, it is indeed possible to detect behavioural problems in preschool children early on, thus allowing for early intervention and prevention. Early detection thus offers this specific group of children a much greater opportunity to succeed compared to children for whom treatment are introduced later on. Therefore, a vision is to dispense with

the “wait and see” mentality among preschool children. A reduction in personal suffering for both the child and their family is imminent and at the macro level.

This study also highlights the importance of not waiting for a full diagnosis but looking at early behavioural problems when planning for interventions. It may prove more fruitful to shift the focus more towards the child’s functioning and to offer support in preschool and the family based on the child’s symptoms and strengths. It is also crucial to highlight the importance of good cooperation between preschool and healthcare for children with special needs in order to provide the correct type of support in adequate amounts, and deliver this within the child’s daily environment.

An important addition to the current body of knowledge within healthcare is that it is possible to screen for mental health even in children of preschool age by observing their engagement and social interaction. Using the SDQ together with the CEQ gives a holistic picture of the child’s functioning.

Woods, Wilcox, Friedman, and Murch (2011) see a need for the focus of intervention work to be moved from the clinic into the child’s natural environment, whilst simultaneously adapting it to suit the specific conditions and wishes of the family. More health issues need to be attended to at the primary level, taking a natural place in the individual’s everyday milieu. For this reason, the outcome of this thesis is that it is possible to detect mental health problems that are exhibited as behavioural problems at preschool level.

This thesis also highlights the importance of investigating the role of hyperactivity when considering interventions and treatment for conduct problems, both at a preschool level and also at a specialist clinical level. Coexisting problems (hyperactivity and conduct problems) may develop, with increasing problems in other areas, such as social interaction and peer problems, and this may lead to variations in the level of functioning. Based on the current work, we now have more knowledge about how we can identify protective and risk indicators for mental health problems in preschool children at an early stage in life. This knowledge could play an important role in identifying areas for intervention and reduce the dynamic risk factors in a child’s life.

In further work to improve development and reduce mental health problems in children, both society as a whole and politicians as policymakers may need to invest in more research as well as providing more resources for preschools and CHC.

Future Research

Studies investigating indicators for protection and risk factors regarding mental health in preschool children are needed. This requires the development of generally-accepted, structured and reliable screening methods for early detection. A prerequisite would be the formation and implementation of methods designed to help in those cases where mental health issues such as emotional distress or behavioural problems have been ascertained. The goal is to facilitate positive development in the child by means of early promotion, prevention and intervention (Bondestam et al., 2013; Ezpeleta et al., 2013; Gustafsson & Hansson, 2013; SOU, 1998:31).

It has been demonstrated here that preschool teachers can indeed effectively screen for behavioural problems using the SDQ among preschool children. The next research step would include intervention studies in preschools and in the family. Collaborations between preschools, CHC, specialist healthcare and social services should be studied, this being especially important because it is a fairly unexplored area of research.

Further studies on a larger population of preschool children using the SDQ with a cut-off level based on gender perspectives and cultural differences should be undertaken, in order to address the issue of the significance of employing different cut-off levels. The factor structure of the SDQ should also be examined using confirmatory factor analysis.

Further research needs to be conducted to explore how young children's internalising problems can be identified as observable behaviours in preschool children.

More resources looking into how conduct problems develop and what part hyperactivity plays in their development are important.

It is also important to discover the role of engagement in ADHD. Children with ADHD have difficulties in focusing and need support to be able to engage in order to learn and play.

A follow-up study investigating preschool children who have participated in the TUTI study as they reach school-age would provide further knowledge about the development of mental health problems.

CONCLUSIONS

It is possible for preschool teachers to use the SDQ to identify early signs of emotional and behavioural problems in young children. In children 1–3 years of age, the subscales for hyperactivity and conduct worked well. In the age group 4–5 years, the four original SDQ subscales produced reasonable results. Swedish norms for the SDQ are mainly like those found in other European countries.

Preschool children's conduct problems decrease over time. Children with more initial hyperactivity have more conduct problems later on.

Children high in engagement and social interaction function well, even in the presence of hyperactivity, while children exhibiting low engagement and interaction, alone or in combination with hyperactivity and conduct problems, continue to have problems. Stability was related to the existence of a larger number of protective or risk indicators respectively. Children not following specific pathways tended to have moderate levels of protective and risk factors.

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APPENDIX

Tidig upptäckt – tidig insats

*Ett forskningsprojekt i samarbete mellan Högskolan i
Jönköping och Jönköpings Läns Landsting finansierat av
Socialstyrelsen*

Formulär till förskolepersonal

Först några bakgrundsfrågor ...

Ort _____

Förskola och avdelning _____

Formuläret ifyllt av:

- ☐ Förskollärare
☐ Barnskötare
☐ Personal med annan utbildning, ange vilken

.....

Barnets ålder (månader)

Pojke ☐ Flicka ☐

Barnet bor med

- ☐ Båda föräldrarna
☐ Mamma
☐ Pappa
☐ Växelsvis mamma/pappa
☐ På annat sätt

Har barnet annat modersmål än svenska? Ja ☐ Nej ☐

Är barnet i behov av särskilda stödåtgärder? Ja ☐ Nej ☐

Engagemang (CEQ)

I det här formuläret är vi intresserade av att veta i vilken grad barnet är aktivt engagerat i olika situationer som förekommer i förskolan.

Kryssa för det svarsalternativ vid varje påstående som bäst överensstämmer med hur barnet brukar göra. Det finns inga svar som är rätt eller fel. Kryssa endast för **ett** alternativ vid varje påstående.

Beteende	Händer nästan aldrig	Händer ibland	Händer ganska ofta	Händer mycket ofta
1. Tittar eller lyssnar på vuxna <i>Exempel:</i> Vid samlingen följer barnet med och verkar förstå vad man pratar om				
2. Leker med vuxna som tar initiativ till lek <i>Exempel:</i> Barnet är med i leken när någon i personalen vill leka med barnet				
3. Försöker få vuxna att göra saker <i>Exempel:</i> Barnet försöker få en personal att hämta ner en bok från hyllan				
4. Försöker få andra barn att göra saker <i>Exempel:</i> Barnet försöker få ett annat barn att vara med och gunga				
5. Leker med leksaker <i>Exempel:</i> När barnet har tillgång till leksaker är det intresserat och leker med dem				
6. Försöker göra klart saker trots att det tar lång tid <i>Exempel:</i> Barnet vet hur man lägger enkla pussel, och fortsätter tills det är klart				
7. Pratar om saker som hänt eller ska hända <i>Exempel:</i> Barnet pratar om när man var på biblioteket sist. Händelsen ska ha inträffat minst ett dygn tidigare.				
8. Prövar nya sätt att leka med saker <i>Exempel:</i> Barnet vet redan hur man får en boll att rulla och försöker studsa bollen istället				
9. Leker på ett sätt som motsvarar barnets mögnadsnivå <i>Exempel:</i> Barnet som gör de flesta andra saker (t ex äter, klär sig) på en 2-årigs mögnadsnivå leker också på ett sätt som motsvarar en 2-årigsmognadsnivå				

Beteende	Händer nästan aldrig	Händer ibland	Händer ganska ofta	Händer mycket ofta
10. Försöker få leksaker att fungera <i>Exempel: Barnet letar efter startknappen på bilen för att få bilen att starta</i>				
11. Tittar eller lyssnar på andra barn <i>Exempel: När andra barn leker följer barnet deras rörelser med blicken</i>				
12. Leker med andra barn <i>Exempel: Barnet är med och leker med andra barn när tillfälle till lek finns</i>				
13. Håller sig aktiv <i>Exempel: När inget barn eller vuxen finns att leka med hittar barnet ändå på något att göra</i>				
14. Upprepar ljud <i>Exempel: Barnet härmar ljudet från en polisbil när det leker med bilar</i>				
15. Försöker använda språket på nya sätt <i>Exempel: Barnet övar på nya ord som det hört</i>				
16. Verkar vara medveten om det som pågår runt barnet <i>Exempel: Barnet tittar åt det håll ett visst ljud kommer ifrån och på människor och saker i rörelse</i>				
17. Löser problem fort <i>Exempel: Om en leksak ramlar ner bakom soffan, hittar barnet ett sätt att komma åt den</i>				
18. Leker med vuxna <i>Exempel: När vuxna är i närheten pratar barnet med och är gärna nära dem</i>				
19. Kommer på hur saker fungerar utan att be om hjälp <i>Exempel: När barnet får tillgång till en ny leksak försöker det leka med den utan att be om hjälp</i>				
20. Har ett förståeligt sätt att kommunicera <i>Exempel: Barnet använder ett sätt att kommunicera som andra än barnets föräldrar förstår</i>				
21. Låtsats vara saker, djur eller andra människor <i>Exempel: Barnet kryper på golvet och säger "mjauu"</i>				

Beteende	Händer nästan aldrig	Händer ibland	Händer ganska ofta	Händer mycket ofta
22. Barnet leker med saker på det sätt som det är tänkt <i>Exempel:</i> Barnet bankar med hammaren på klossarna, istället för att bita i dem				
23. Koncentrerar sig <i>Exempel:</i> Barnet lutar sig över pappret när det ritat och väljer noga färger att rita med				
24. Väljer att göra svåra saker <i>Exempel:</i> Barnet leker med saker som kräver viss ansträngning att hantera				
25. Leker med andra barn som tar initiativ till lek <i>Exempel:</i> Barnet börjar prata eller leka med ett annat barn som visar att det vill leka				
26. Gör vad man kan förvänta sig (av barnet) i de flesta aktiviteter <i>Exempel:</i> Barnet klär på sig när man ska gå ut, går och tvättar händerna före maten och leker med andra barn ute				
27. Reagerar på förändringar hos människor och saker i miljön <i>Exempel:</i> Barnet säger: "Var är soffan?", när den har flyttats				
28. Låtsats att leksaker är något annat <i>Exempel:</i> Barnet låtsats att en låda är en bil eller använder en avlång kloss som nappflaska till dockan				
29. Utforskar saker eller platser <i>Exempel:</i> Barnet vänder upp och ner på en låda för att se vad som finns under				

Beteende (C-TRF)

I detta formulär ställs frågor om hur du uppfattar barnets beteende i förskolan. Fyll i **din/er egen uppfattning** om barnet, även om andra personer kanske inte skulle ha samma åsikt. **Besvara alla beteenden så noggrant som möjligt, även om en del inte tycks passa barnet.** Om du inte tycker att frågan är relevant, kryssar du **också** i denna ruta.

Beteende	Stämmer ej	Stämmer någorlunda, eller ibland	Stämmer mycket bra, eller ofta	Ej relevant
1. Kan inte koncentrera sig, låg uthållighet				
2. Undviker blickkontakt				
3. Kan inte sitta stilla, är rastlös eller hyperaktiv				
4. Svårt att vänta, vill ha allting omedelbart				
5. Klänger på vuxna, eller är alltför beroende				
6. Apatisk eller omotiverad/ointresserad				
7. Gråter mycket				
8. Trotsig				
9. Krävande och pockande på uppmärksamhet				
10. Förstör saker som tillhör förskolan eller andra barn				
11. Blir störd av förändringar i dagliga rutiner				
12. Äter dåligt				
13. Är rädd för vissa djur, situationer eller platser				
14. Slår sig ofta, "olycksfågel"				

Beteende	Stämmer ej	Stämmer någorlunda, eller ibland	Stämmer mycket bra, eller ofta	Ej relevant
15. Blir onormalt upprörd när han/hon skiljs från föräldrarna				
16. Matvägrar				
17. Vägrar leka aktiva lekar				
18. Skriker mycket				
19. Visar lågt intresse för saker runt honom/henne				
20. Plötsliga förändringar i humör eller känslor				
21. Får raseriutbrott eller har häftigt humör				
22. Alltför ängslig eller orolig				
23. Underaktiv, rör sig långsamt eller saknar energi				
24. Sover mindre än de flesta barn på dagen				
25. Är trött				

Förskolepersonalens upplevelse av samspel med barnet

I det här formuläret kryssar du det alternativ som du tycker stämmer bäst med påståendet till vänster, d v s **endast ett alternativ per påstående är möjligt**.

Påstående	Sällan	Ganska sällan	I 50%	Ganska ofta	Oftast
1. Barnet påbörjar samspelet					
2. Barnet avslutar samspel på lämpligt sätt					
3. Barnet svarar på min kommunikation					
4. Barnet förstår vad jag menar					
5. Barnet kommenterar eller visar intresse för det jag gör					
6. Barnet kan rikta min uppmärksamhet mot ett gemensamt innehåll					
7. Barnet stannar tillräckligt länge i en aktivitet/situation					
8. Barnet bestämmer innehåll i samspelet					
9. Barnet avgör hur länge vi skall sysselsätta oss med ett material, en lek, ett "ämne"					
10. Barnet anpassar sitt tempo i samspelet					
11. Jag svarar på barnets kommunikation					
12. Jag förstår vad barnet menar					
13. Jag använder ett språk som är lämpligt för vårt samspel					
14. Jag kommenterar eller visar intresse för det barnet gör					
15. Jag kan rikta barnets uppmärksamhet mot ett gemensamt innehåll					
16. Jag vet hur jag skall hålla kvar barnets koncentration på det vi sysselsätter oss med tillsammans					
17. Jag bestämmer innehåll i samspelet (vad vi kommunicerar om)					
18. Jag engagerar mig i aktiviteter och anv. material som passar för barnets ålder, utvecklingsnivå och intressen					
19. Jag anpassar min kommunikation efter barnets tempo					
20. Jag vet vilken situation som lockar barnet till samspel och kan vid behov skapa sådana situationer					

Barnets samspel med andra barn

I det här formuläret kryssar du det alternativ som du tycker stämmer bäst med påståendet till vänster, d v s **endast ett alternativ per påstående är möjligt**.

Påstående	Sällan	Ganska sällan	I 50%	Ganska ofta	Oftast
1. Barnet påbörjar samspel med andra barn					
2. Barnet avslutar samspel med andra barn på ett lämpligt sätt					
3. Barnet svarar på andra barns kommunikation					
4. Barnet förstår vad andra barn menar					
5. Barnet visar intresse för det andra barn gör					
6. Barnet kan rikta andra barns intresse mot ett gemensamt föremål, aktivitet eller person					
7. Barnet stannar tillräckligt länge i aktivitet/lek tillsammans med andra barn					
8. Barnet säger ifrån till andra barn					
9. Barnet förstår när andra barn säger ifrån					
10. Barnet anpassar sitt tempo i samspelet med andra barn					
11. Barnet fullföljer samspel med andra barn					
12. Andra barn svarar på barnets kommunikation					
13. Andra barn förstår vad barnet menar					
14. Andra barn visar intresse för det barnet gör					
15. Andra barn kan rikta barnets intresse mot ett gemensamt föremål, aktivitet eller person					
16. Andra barn anpassar sitt tempo i samspelet med barnet					

Barnets fungerande (ICF-CY Core sets)

Dessa frågor avser barnets generella fungerande i vanligt förekommande aktiviteter och situationer i förskolan. OBS! endast ett alternativ per påstående är möjligt.

	Stämmer inte alls	Stämmer delvis	Stämmer helt
1. Barnet använder sina armar och händer , t ex griper och släpper föremål, plockar russin, knäpper knappar, kastar och fångar bollar			
2. Barnet rör sig på olika sätt , t ex går i trappor, springer, hoppar, kryper eller hasar på stjärten			
3. Barnet reagerar på smärta , t ex när det ramlar och slår sig, har ont i någon kroppsdel eller generellt			
4. Barnet förstår grundläggande begrepp som mängd, längd, samma, olika			
5. Barnet kan påbörja, genomföra och avsluta en uppgift , t ex sätta på en strumpa, sortera grejer, leka kurragömma med kamrater. Också att ta emot en instruktion eller följa regler.			
6. Barnet klarar övergångar mellan uppgifter , som t ex att gå och tvätta händerna efter maten			
7. Barnet kan konversera , dvs. starta, hålla igång och avsluta ett samtal			

Närmiljö i förskolan

Nedan ställs frågor som handlar om **den miljö barnet möter i förskolan**. Kryssa för det alternativ som du tycker stämmer bäst med påståendet till vänster, **d v s endast ett alternativ per påstående är möjligt**.

Påstående	Stämmer inte alls	Stämmer ganska dåligt	Stämmer ganska bra	Stämmer helt
1. Det är god stämning i gruppen				
2. Barnen kommer bra överens				
3. Barnen är glada och trygga				
4. Det finns god tillgång på varierande leksaker				
5. Det finns god tillgång på lämpligt material				
6. Leksaker och lämpligt material finns inom räckhåll för barnen				
7. Leksakerna används av barnen				
8. Det finns gott om utrymme för barnen att leka fritt och/eller i grupp inomhus				
9. Det finns utrymme för barnen att gå undan för sig själva en stund om de skulle vilja				
10. Förskolans lokaler är trevliga att arbeta i				
11. Lokalerna går att anpassa efter olika typer av pedagogisk verksamhet				
12. Barnen i förskolan respekterar varandra trots olikheter				
13. Förskolans utemiljö är varierande och god

Påstående	Stämmer inte alls	Stämmer ganska dåligt	Stämmer ganska bra	Stämmer helt
14. Det finns god tillgång på bra uteleksaker				
15. Föräldrar besöker ofta förskolan, utöver att hämta och lämna barnen				
16. Föräldrar hämtar och/eller lämnar barnen på förskolan				
17. Föräldrar är aktivt involverade i verksamheten (t.ex. föräldraråd, medverkar vid utflykter, etc.)				

Förskolepersonalens uppfattning av samverkan med föräldrar

Här fyller ni i **hur ni ser på samverkan med föräldrarna till barnet**.

Påstående	Stämmer inte alls	Stämmer i liten utsträckning	Stämmer ganska bra	Stämmer helt
1. Jag/vi får ta del av föräldrarnas kunskaper om barnet				
2. Föräldrarna ger information som är tydlig och användbar				
3. Jag/ vi deltar aktivt och inte bara som lyssnare vid träffar med föräldrarna				
4. Jag/vi kan påverka när, var och hur kontakt med föräldrarna sker				
5. Jag/vi och föräldrarna diskuterar gemensamt synsätt, pedagogisk verksamhet, mål och förväntningar				

Styrkor och svårigheter (SDQ-Sve)

Var vänlig kryssa för det alternativ som du tycker passar bäst. **Det är värdefullt om du besvarar alla frågor, även om du inte är helt säker, tycker att frågan verkar konstig, eller inte tycks passa barnet.** Om du inte tycker att frågan är relevant, kryssar du **också** i denna ruta.

	Stämmer inte	Stämmer delvis	Stämmer helt	Ej relevant
1. Omtänksam, tar hänsyn till andra människors känslor				
2. Rastlös, överaktiv, kan inte vara stilla länge				
3. Klagar ofta över huvudvärk, ont i magen eller illamående				
4. Delar gärna med sig till andra barn (t ex godis, leksaker, pennor)				
5. Har ofta raseriutbrott eller häftigt humör				
6. Ganska ensam, leker eller håller sig ofta för sig själv				
7. Som regel lydig, följer vanligtvis vuxnas uppmaningar				
8. Oroar sig över mycket, verkar ofta bekymrad				
9. Hjälpssam om någon är ledsen, upprörd eller känner sig dålig				
10. Svårt att sitta stilla, rör och vrider jämt på sig				
11. Har minst en god vän (kamrat)				
12. Slåss/bråkar ofta med andra barn eller mobbar dem				
13. Ofta ledsen, nedstämd eller tårögd				
14. Vanligtvis omtyckt av andra barn				
15. Lättstörd, tappar lätt koncentrationen				
16. Nervös och klängig i nya situationer, blir lätt otrygg				
17. Snäll mot yngre barn				
18. Säger ofta emot vuxna				
19. Blir retad eller mobbad av andra barn				
20. Ställer ofta upp och hjälper andra (föräldrar, lärare, barn)				
21. Kan stanna upp och tänka sig för innan hon/han gör olika saker				
22. Kan vara elak mot andra				
23. Kommer bättre överens med vuxna än med andra barn				
24. Rädd för mycket, är lättskrämd				
25. Fullföljer uppgifter bra, bra koncentrationsförmåga				

Har du andra kommentarer eller bekymmer du vill ta upp?

.....

.....

Sammantaget tycker du att detta barn har svårigheter på ett eller flera av följande områden: med känslor, koncentration, beteende eller med att komma överens och umgås med andra människor?

Nej Ja, små svårigheter Ja, klara svårigheter Ja, allvarliga svårigheter

☐☐☐☐

Om du svarade "Ja" på ovanstående fråga, var vänlig besvara följande frågor:

Hur länge har svårigheterna funnits?

Mindre än
1 månad

1-5 månader

6-12 månader

Mer än 1 år

☐☐☐☐

Oroas eller lider barnet av sina svårigheter?

Inte alls

Bara lite

Ganska mycket

Väldigt mycket

☐☐☐☐

Stör svårigheterna barnets vardag i barngruppen på något av följande områden?

Inte alls

Bara lite

Ganska mycket

Väldigt mycket

I FRI LEK

☐☐☐☐

I ORG. SITUATIONER

☐☐☐☐

I RUTINER

☐☐☐☐

Är svårigheterna en belastning för dig eller för barngruppen som helhet?

Inte alls

Bara lite

Ganska mycket

Väldigt mycket

☐☐☐☐

Görs speciella åtgärder för barnet, som ni får handledning för? Ja ☐ Nej ☐

Om du svarade "Ja" på ovanstående fråga, var vänlig beskriv dessa åtgärder så noggrant du kan, t ex speciellt träningsprogram ...

.....

.....

.....

.....

Görs speciella åtgärder för barnet, som ni inte får handledning för? Ja ☐ Nej ☐

Om du svarade "Ja" på ovanstående fråga, var vänlig beskriv dessa åtgärder så noggrant du kan, t ex se till att en vuxen är nära barnet, särskilt bemötande ...

.....

.....

.....

.....

Forts till nästa sida om barnet är mellan 1 – 3 år...

Tilläggsfrågor SDQ för barn 1-3 år

Dessa frågor besvaras enbart för barn mellan 1-3 år. Det är värdefullt om du besvarar alla frågor, även om du inte är helt säker, tycker att frågan verkar konstig, eller inte tycks passa barnet. Om du inte tycker att frågan är relevant, kryssar du också i denna ruta.

	Stämmer inte	Stämmer delvis	Stämmer helt	Ej relevant
1. Gnäller ofta				
2. Passiv, drar sig undan				
3. Kan hålla gemensamt fokus				
4. Trotsig				

TACK!

FACULTY OF MEDICINE AND HEALTH SCIENCES

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