Forord

Dette arbeidet markerer slutten på psykologistudiet. Fokuset for oppgaven omhandler

barn, et tema jeg har arvet interessen for etter min mor som også vekket min generelle

interesse for psykologi. Jeg synes det har vært spennende å få mulighet til å fordype

meg i området angst hos barn i skolealderen, og få innblikk i hvordan angst utvikler seg

og hvilke faktorer som kan påvirke dette. Oppgaven er basert på datamateriale fra det

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foreldre, lærere og helsepersonell som har deltatt i undersøkelsen. Alle sluttanalyser

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prosessen.

Abstract

Background: Research on predictors of anxiety have traditionally focused on large age groups, while studies of young school-aged children at specific age intervals remain scarce. This investigation examines factors related to the child, parent and environment at age 6 as potential predictors of anxiety symptoms at age 8. **Method:** This study applied data from the Trondheim Early Security Study (TESS) where parents and children of a community sample was examined when children started first grade ($n = 795$), and reassessed in third grade ($n = 699$). Symptoms of psychiatric disorders, negative life events, temperament and peer victimization were assessed at age 6 with the Preschool Age Psychiatric Assessment (PAPA) and with the Child and Adolescent Psychiatric assessment (CAPA) at age 8. Assessment of attachment and parent-child interaction were based on observation, and school teachers rated the children's social skills. **Results:** Symptoms of anxiety and attention-deficit/hyperactivity disorder (ADHD), high negative affect, and high attachment disorganization contributed to an increase in symptoms of anxiety two years later. Parental and environmental factors were not found to be significant predictors of anxiety. **Conclusion:** In the light of current findings, vulnerabilities like high negative affect, high attachment disorganization, symptoms of anxiety and ADHD during early middle childhood may contribute to the development of anxiety symptoms. Interventions aimed toward such vulnerabilities, treatment or using these factors to identify high-risk children in early middle childhood might be efficacious.

     Keywords: Anxiety, early middle childhood, disorganized attachment, negative affect, emotional regulation

Anxiety in early middle childhood

– A prospective study of predictors

Anxiety disorders are among the most common psychiatric disorders both in childhood (Heiervang et al., 2007), adolescence (Polanczyk, Salum, Sugaya, Caye, & Rohde, 2015), and adulthood (Steel et al., 2014). The prevalence of anxiety disorders varies between 2.6% and 5.2% in children younger than 12 years, with separation anxiety being the most common disorder (Cartwright-Hatton, McNicol, & Doubleday, 2006; Costello, Egger, & Angold, 2005; Ford, Goodman, & Meltzer, 2003). The research of stability in anxiety disorders have been mixed (Carballo et al., 2010; Costello et al., 2005; Beesdo, Knappe, & Pine, 2009; Copeland, Angold, Shanahan, & Costello, 2014; Wichstrøm, Belsky, & Steinsbekk, 2017). Lifetime prevalence in anxiety is higher for women than men (McLean, Asnaani, Litz, & Hofman, 2011), something not found in childhood (Egger & Angold, 2006). The exact age of onset has been difficult to clarify due to the seemingly instability of anxiety disorders and lack of reliable and valid assessment tools (Franz et al., 2013; Rapee, Schniering, & Hudson, 2009), but research of preschool children indicates that it is possible to discern clinical anxiety in children between 2 and 5 years old (Egger & Angold, 2006; Franz et al., 2013).

There are several known lifetime outcomes associated with anxiety: Adverse brain development (Carrion, Weems, & Reiss, 2007; De Bellis et al., 1997), psychological problems such as depression, chronic anxiety (Kendall, Safford, Flannery-Schroeder, & Webb, 2004) or substance abuse (Beesdo et al., 2009; Kendall et al., 2004), impaired function in at least one young adult domain (health, financial, or interpersonal) (Copeland et al., 2014), an increased amount of negative life events

(Kerns, Siener, & Brumariu, 2011), dependent living, less likely to work, and an increased likeliness to utilize mental health services (Last, Hansen, & Franco, 1997), In addition, delayed help-seeking may be a problem and associated with younger age at symptom onset and slower problem recognition (Thompson, Issakadis, & Hunt, 2008). Thus, identification, intervention and treatment of anxiety should be ensured both for the children's present and future.

Theoretical understanding of anxiety

Weems (2008) holds that anxiety has a functional role and that the core fundament of anxiety disorders is a dysregulation of the normative anxiety response system. Over time, the predisposition to dysregulate anxious and negative affects develops into undifferentiated anxious feelings, which can be displayed across different domains (e.g. behaviourally, socially). Barlow (1988) speculated that development of anxiety can be understood as interactions between three types of vulnerabilities. Modifying the tripartite model of anxiety and depression (Clark & Watson, 1991), Barlow (2000) suggested a tripartite vulnerability model consisting of biological, generalised psychological vulnerabilities and specific psychological vulnerabilities. The specific psychological vulnerabilities direct focus more on certain life events, perceiving a heightening of threat or danger, thereby attaching more anxiety to the events. This creates the basis for fearfulness of certain situations and thus, over time the development of discrete anxiety disorders.

Research on anxiety has traditionally treated childhood anxiety as a coherent concept (e.g. Rapee et al., 2009). However, the evidence is mixed concerning the stability of anxiety over time. Therefore, it seems problematic to treat childhood anxiety as a coherent concept. Focusing on a temporally limited period of development could

uncover nuances otherwise hidden when viewing the construct of childhood anxiety as a single entity. As a study of the same population has already been conducted with preschoolers (Wichstrøm, Belsky, & Berg-Nielsen, 2013), it seems prudent to research anxiety in early middle childhood, known as "the forgotten years" (Mah & Ford-Jones, 2012).

From a biological point of view, middle childhood represents a developmental phase in which children still are sexually immature, yet less dependent on their parents for survival (Del Giudice, 2014). Starting school is one of the major ecological transitions in life (Bronfenbrenner, 1977), and is possibly fraught with developmental gains and challenges. The way this transition is managed sets the stage for success in school and response to future transitions (Dockett & Perry, 1999; Ladd & Dinella, 2009; La Paro & Pianta, 2000). Individuals other than parents will set standards and demands they expect the child to follow (Rubie-Davis, Flint, & McDonald, 2012).

Children in middle childhood reach new maturity in cognition, emotion and sociability that will nuance interactions with their social worlds (Harold & Dale, 2005). Children are exposed to new peers, and peer relations may become more important (Lynch & Cicchetti, 1997). During school age, the social network of children shifts from social interaction favoring adults to increased interaction with other children (Lynch & Cicchetti, 1997), and interaction and social comparisons with friends and peers might enhance or offset family effects in development such as self-regard (Franco & Levitt, 1998).

Children who develop anxiety are often found to be shy and wary of new situations, hence they commonly avoid novelty (Hudson, Dodd, Lyneham, & Bovopoulous, 2011). Moreover, these children may experience certain attentional biases

when it comes to threatening stimuli, such as hypervigilance, escalating possible perceived threats and seeing increased amount of threats in the environment (Ehrenreich & Gross, 2002).

Longitudinal studies of middle childhood are scarce, and the existing ones have addressed large time spans (Feng, Shaw, & Silk, 2008; Kerns et al., 2011) or later parts of middle childhood (Brumariu & Kerns, 2008). To the best of my knowledge, no study has investigated anxiety in early middle childhood which might have its own unique mechanisms. This study will therefore look at predictors of anxiety in early middle childhood.

Risk factors in developing anxiety - Child factors

Biological. Child temperament has long been implicated in anxiety (Degnan, Almas, & Fox, 2010; De Pauw & Mervielde, 2010; Hudson et al., 2011). Temperament is often understood as three broad dimensions: Negative affect (NA) - characterized by subjective distress and unpleasureable feelings (Austin & Chorpita, 2004; Watson, Clark, & Tellegen, 1988), Surgency (SU) – characterized by, for example, positive anticipation and high intensity pleasure (Rothbart, Ahadi, Hershey, & Fisher, 2001), and Effortful Control (EC) – characterized by, for example, inhibitory control and attentional focus (Rothbart et al., 2001). Several studies concluded that high levels of negative affect is implicated in the development of psychiatric disorders-- including anxiety—among children (Baldwin & Dadds, 2008; Barlow, 2000). On the other hand, results concerning surgency and effortful control have shown less consistence (Eisenberg et al., 2009; Nigg, 2006). We will investigate whether this finding holds true for the etiology of anxiety in early middle childhood.

Relational. Attachment has been linked to anxiety and emotion regulation (Brumariu, Kerns, & Seibert, 2012; Colonnesi et al., 2011). Children who are less secure report more anxiety and different styles of parenting are associated with childhood anxiety disorders (Brumariu et al., 2012; Rapee, 1997). Recent research is mixed about whether disorganized attachment is associated with anxiety. Whereas Madigan and colleagues found that disorganized attachment can lead to anxiety (Madigan, Brumariu, Vallani, Atkionson, & Lyons-Ruth, 2016), Groh and colleagues only found support for a link between disorganized attachment and behavioral problems (Groh, Fearon, van Ijzendoorn, Bakerman-Kranenburg, & Roisman, 2017). We will therefore investigate if disorganized attachment in middle childhood predicts later anxiety.

Comorbidity. Externalizing disorders (i.e attention-deficit/hyperactivity disorder [ADHD], oppositional defiant disorder [ODD] and conduct disorder [CD]), and emotional disorders (such as depression) often co-occur with anxiety disorders (Copeland et al., 2014; Costello et al., 2005; Egger & Angold, 2006; Kendall et al., 2010; Larson, Russ, Kahn, & Halfon, 2011). Depression co-occurs most often with anxiety (Ezpeleta, Keeler, Erkanli, Costello, & Angold, 2001; Zahn-Waxler, Klimes-Dougan, & Slattery, 2000), as depression was 8.2 times as likely in children with anxiety, compared to CD/ODD (3.1) or ADHD (3.0) (Costello et al., 2005). A plausible link for behaviour disorders and anxiety is that both might be expressions of an underlying deficiency of emotional regulation (Ambrosini, Bennett, & Elia, 2013; Eisenberg, Spinrad, & Eggum, 2010). ADHD might be linked with anxiety due to inattention symptoms, negative affect and behaviour problems (Baldwin & Dadds, 2008). Anxiety in childhood and adolescence often precede or predict later depressive

disorders (Ezpeleta et al., 2001; Zahn-Waxler et al., 2000). As anxiety is often associated with other disorders, controlling for the presence of other disorders becomes essential for discerning true risk factors.

Parental risk factors

Anxiety. The evidence regarding parental anxiety predicting child anxiety (Ford, Goodman, & Meltzer, 2004; Hudson et al., 2011; Micco et al., 2009; Wichstrøm et al., 2013) or not is mixed (McLeod, Wood, & Weisz, 2007). It is also currently unknown to which degree parental anxiety is explained by genetic risk factors or by environment factors that operate in anxiogenic families (Murray, Creswell, & Cooper, 2009). Hudson and colleagues (2011) presumed that maternal anxiety influence the child through genetic and environmental risk. This study will control for parental anxiety to investigate whether it confers risk for developing anxiety.

Economy and education. Low socioeconomic status (SES) and divorce ratings was disproportionally higher amongst parents of preschoolers with anxiety disorders (Wichstrøm, Berg-Nielsen, Angold, Solheim & Sveen, 2012). Ford and colleagues (2004) reported that anxiety was linked with single parenting, poor parental reading skills and lower level of parental education. This link is not universal (Canino et al., 2004), possibly because of general poverty (Angold et al., 2002; Costello, Farmer, Angold, Burns, & Erkanli, 1997). Because of mixed evidence, we adjusted for SES in the current analyses.

Environmental risk factors

Social. A meta-analysis of longitudinal research showed that peer victimization function as both antecedent and consequence of internalizing problems (such as anxiety) in children (Reijntjes, Kamphuis, Prinzie, & Telch, 2010). Peer victimization occurs as

early as preschool years (Barker et al., 2008) and is implicated in the etiology of anxiety

in adolescence (Molcho et al., 2009; Stapinski, Araya, Heron, Montgomery, & Stallard,

2015). Longitudinal evidence shows that peer victimization can predict depressive

symptoms (Schwartz, Lansford, Dodge, Pettit, & Bates, 2015) and anxiety disorders in

adulthood (Takizawa, Maughan, & Arsenault, 2014).

Social skills have been shown to predict peer victimization (Andrews, Hanish,

Fabes, & Martin, 2014), where low social skills predict lower friendship quality, in turn

placing children at risk for victimization (Crawford & Manassis, 2011), and this

relationship seems to be bi-directional (Spence & Rapee, 2016). In addition, good

emotional regulation has been shown to predict decreases in peer victimization

(Godleski, Kamper, Ostrov, Hart, & Blakely-McClure, 2015). We will therefore

investigate peer victimization as a risk factor for anxiety, with social skills as a possible

protective factor, as it remains uncertain in early middle childhood.

Negative life events. Anxiety is linked to negative and stressful life events, such

as the death of a family member or parents with poor mental health (Broeren, Newall,

Dodd, Locker, & Hudson, 2014; Ford et al., 2004). A challenge in this research has

been separating whether negative life events lead to anxiety or if anxious individuals

interpret a larger portion of their life events as negative (Rapee et al., 2009). Anxious

children experience a greater number of negative life events and chronic adversities

compared to controls (Allen, Rapee, & Sandberg, 2008). In monozygotic twin pairs, the

anxious twin was more likely to report negative life events compared to their non-

anxious twin (Eley & Stevenson, 2000). A significantly larger number of negative life

events and adversities were assessed prior diagnosis of anxious children compared to

controls (Allen et al., 2008). Research differ on which point in time negative life events

can predict later anxiety. One study found that negative life events could predict later anxiety before 5 years of life (Phillips, Hammen, Brennan, Najman, & Bor, 2005), while another did not find this predictive link before children were 10 years old (Timmermans, van Lier, & Koot, 2010). Fox, Halpern, Ryan and Lowe (2010) found support for the tripartite model where a combination of high negative affect and high occurrence of negative life events predicted anxiety. We will test if negative life events in early middle childhood can predict later symptoms of anxiety.

Aims of the study

A large range of factors have been suggested as risk and protective factors in the development of anxiety (Feng et al., 2008). However, child, parent and peer factors have seldom been included in the same study (Degnan et al., 2010), and the development of anxiety during early middle childhood is scarcely studied. On this background, the present longitudinal study aims to investigate factors that can predict anxiety in a large screen-stratified community sample. Many rating scales does not provide items that directly correspond to symptoms as defined by the DSM-IV and parents might have limited exposure to the full range of normative behavior of children and therefore have trouble identifying clinical symptoms of disorder (Husby & Wichstrøm, 2017). Data was therefore gathered using clinical interviews, which allowed for clarification of questions and responses to increase accuracy interpretation, thus aiding in distinguishing clinically significant symptoms from normal-range variation in children's behavior (Bufferd, Dougherty, Carlson, & Klein, 2011).

More specific this study examines whether child factors (temperament, attachment, social skills, psychiatric symptoms), parent factors (parental anxiety, SES) and environmental factors (peer victimization, negative life-events) at age 6 predict

symptoms of anxiety disorders at age 8. Based on the theories and evidence reviewed above, I hypothesized the following:

1: Child factors (anxiety, negative affect and disorganized attachment) at T2 would predict higher levels of anxiety symptoms at T3, while social competence would predict comparative reduction of anxiety at T3. 2: Parental factors (higher anxiety, lower SES) at T2 would heighten the risk for anxiety at T3. 3: Higher levels of peer victimization and negative life events at T2 would predict an increase in anxiety at T3. 4: Finally, comorbid symptoms at T2 (ADHD, ODD, CD and depression) would predict an increase in anxiety at T3.

Method

Recruitment and participants

Letters were sent to invite participants to the Trondheim Early Secure Study (TESS), a longitudinal research project aiming to identify factors of risk and protection for psychological health in a sample of children (Wichstrøm et al., 2012). Every child born in the Norwegian town of Trondheim in 2003 and 2004 were invited to participate along with their caregivers in the project ($n = 3,456$). Caregivers with inadequate proficiency in Norwegian were excluded, a necessity so they could be interviewed ($n = 176, 4,2\%$).

Along with the invitation, the participants received the 4-16 version of the Strength and Difficulties Questionnaire (SDQ; Goodman, 1997; Goodman, Ford, Simmons, Gatwald & Meltzer, 2000), which was turned in at a scheduled community health check-up for 4-year-olds. The SDQ was used for screening the sample. The scores were divided into four strata of total difficulties (cut off: 0-4, 5-8, 9-11, 12-20). Using a random number generator, representation was secured from all four strata. The

drawing probabilities increased with increased scoring in SDQ, being 0,37, 0,48, 0,70, and 0,89. Most who attended the pediatric clinic had filled out the SDQ, making the sample, in practice, a community sample (n = 3,358, 97,2%). The local health nurse informed the families about the study procedures that were approved by the Regional Committee for Medical and Health Research Ethics and obtained the families' written consent to participate (n = 166, 5,2% of the families were missed). Most of the families invited (n = 1,250) appeared at the university for further study (n = 995, 79,5%). Drop-out rate did not differ after consenting at the pediatric clinic, based on gender (χ^2 = 0.23, df = 1, NS) nor their SDQ strata (χ^2 = 5.70, df = 3, NS). After adjusting for stratification, the sample was compared to the register information from Statistics Norway on parents of all 4-year-olds in 2007 and 2008 in the city of Trondheim.

The average level of parental education was high (only 6,7% without high-school diploma), which is almost identical to the population's level. The mean number of siblings was 1.3 (SD = 1,0), only 12,8% were the lone child in the family. Descriptive of the TESS-sample is shown in the appendix, see table 1. Generally speaking the population of Trondheim is similar to the national average on several key elements; such as average gross income per inhabitant (Statistics Norway, 2017a) and biological parents cohabitational status (Statistics Norway, 2017b). The current study is using data from the first grade (T2, n = 795) and the third grade (T3, n = 699). The average age of the participants at T2 were 6.7 years old and 8.8 years olds at T3 (Skalická, Stenseng, & Wichstrøm, 2015).

Parental data was collected by means of interview and questionnaires by experienced interviewers. Teacher data was collected by sending questionnaires and

information about the study to the primary schools of the research subjects. Below is a

flow chart depicting the recruitment and subsequent selection process (figure 1).
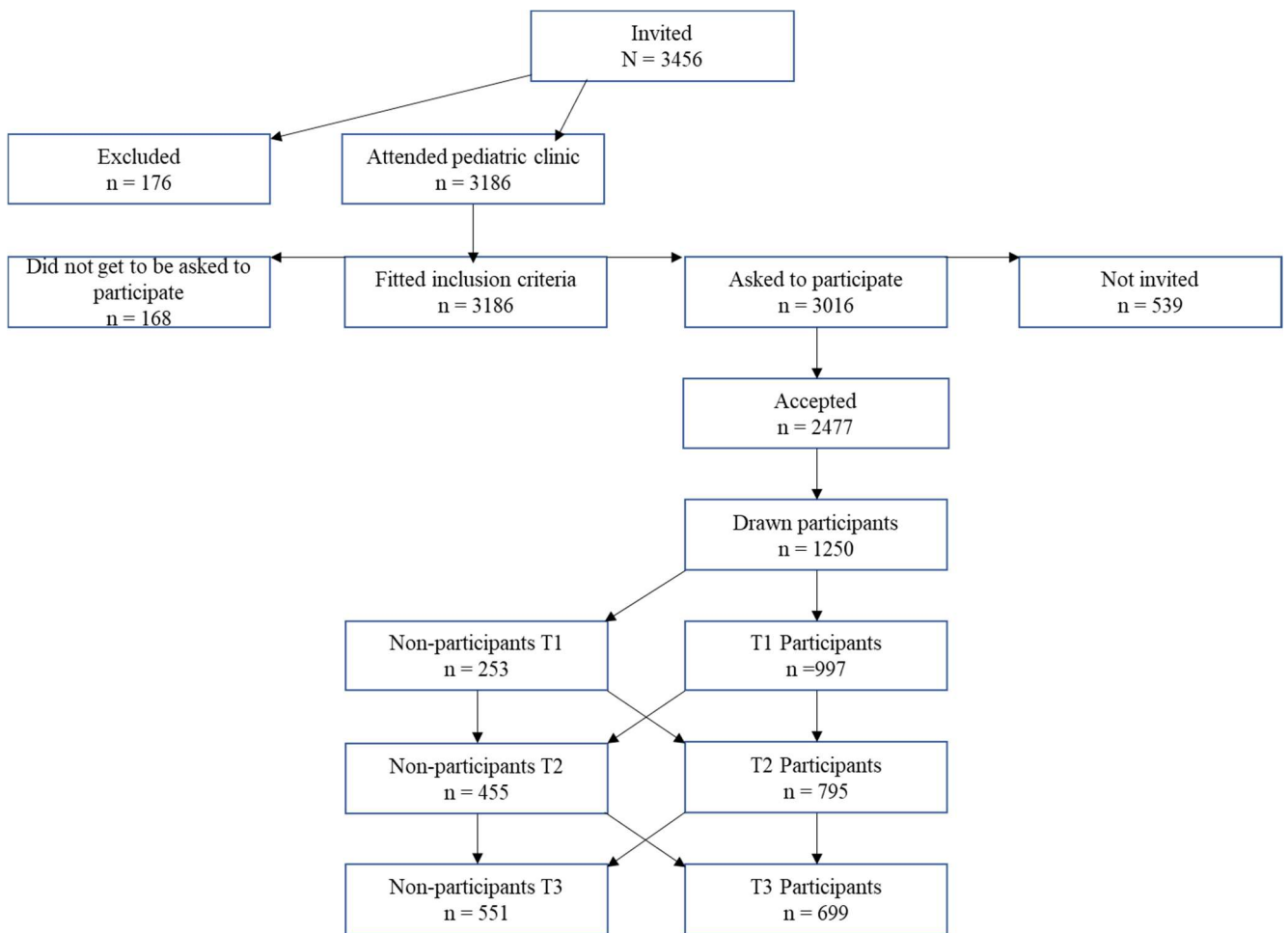
Figure 1

Sample selection process

Figure 1. Recruitment and non-participants at different times of measurement. Some participants who

were not available at T2 were available at T3 and vice versa. Based on sampling from Zahl, Stensbekk, &

Wichstrøm (2017).

Measures

      The Strengths and Difficulties Questionnaire. SDQ consists of 20 items that is

a part of the total difficulties score, which was used for screening (Crone, Vogels,

Hoekstra, Treffers, & Reijneveld, 2008). SDQ has shown good psychometric properties (Goodman, 2001).

The Preschool Age Psychiatric interview (PAPA). PAPA is a semi-structured interview designed to measure psychiatric disorders in children age two to six (Egger et al., 2006). The children's parents completed the measure when the child was six years old, using a structured protocol involving both required and optional questions as a follow-up. The interviewer continues to question the participants until there is enough information to decide if the symptoms are present at pre-specified levels of severity. PAPA focuses on symptoms occurring in the preceding three months. If a symptom is presented, the onset date and frequency of occurrence are registered when it is relevant. The symptomatic criteria used is from the Diagnostic and Statistical Manual of Mental Disorders (fourth edition) (DSM-IV) (American Psychiatric Association, 1994) and was implemented from a computer algorithm, which generated diagnoses. Assessment of individual areas of impairment in function was based upon the World Health Organization's International Classification of Functioning, Disability and Health (World Health Organization, 2001).

The Childhood and Adolescent Psychiatric Assessment (CAPA). CAPA is a semi-structured interviewer based diagnostic interview for use with children and their parents as both are interviewed and is broadly divided into three phases (Angold et al., 1995). It is usable for children at the age of eight or above, but is recommended for use in children nine or above (Jozefiak & Berg-Nielsen, 2016). It is otherwise similar to PAPA both in content and structure, and is valuable for studying symptoms (Angold et al., 2012). In the current study, CAPA was used to measure anxiety symptoms when the children were eight years old. Norwegian versions of CAPA and PAPA were used by

TESS, which have both shown to possess satisfactory reliability and validity over

several studies (Jozefiak & Berg-Nielsen, 2016).

Symptoms recorded lead to an evaluation of disability in one or more of the

three following settings: Home, day-care, or other settings. As the DSM-IV requires

anxiety disorders to lead to distress or impairment, it is important avoid tapping into

normative fear in 6-year-olds (e.g. separation, large animals) and their possible

impairment. Therefore, impairment from anxiety was required for anxiety diagnoses.

All symptoms of ODD and some symptoms of CD is based on frequency evaluations in

the DSM-IV, like "often argues with adults". Where "often" was defined post-hoc as the

highest 10% of the population in the current sample (Egger et al., 2006).

The different interviewers ($n = 7$) had all at least a Bachelor's degree in a related

field and significant previous experience working with families and children. The

interviewers were trained by the developers of PAPA and CAPA, with arranged regular

meetings with regular master coders and interviewers. In addition, the interviewers were

observed behind a one-way mirror to ensure adherence to the protocol and avoid

drifting in the ratings. Of the audio recordings, nine percent were recorded using

blinded raters. PAPA was used to assess symptoms of any anxiety disorder (specifically

social phobia, separation anxiety, generalized anxiety, and specific phobias), ADHD,

ODD, CD and any depressive disorder at the age of six years and the interrater

reliabilities were as follows: Symptoms of any anxiety disorder $k = .89$, ADHD $k = .96$,

ODD $k = .89$, *CD* $k = .76$, and symptoms of depression $k = .86$.

The child's representations of attachment were assessed using the Manchester

Child Attachment Story Task (MCAST; Green, Stanley, Smith & Goldwyn, 2000), an

instrument which has shown stability and expected correlation with other instruments

used to measure attachment. The MCAST uses doll play and story stems to elicit

attachment representations, and findings have underscored its psychometric properties

(Barone et al., 2009; Minnis et al., 2010). A random 10% were blinded to all

information concerning both the child and the parents, resulting in an interrater

reliability of $k = .76$ measuring disorganized attachment as a dimensional construct. For

a more detailed procedure, see Hygen, Guzey, Belsky, Berg-Nielsen and Wichstrøm

(2014).

Social Skills. Social skills were measured using the Social Skills Rating

System's (SSRS) (Gresham & Elliot, 1990). Social skills were reported by the

children's teacher and consisted of 30 items, total score ($\alpha=.82$). The measure consists

of three dimensions: Cooperation (e.g. helping others, sharing materials), assertion (e.g.

appropriately express feelings when wronged, receives criticism well) and self-control

(e.g. appropriately response to teasing, compromises).

Negative life events. Negative life events were measured using PAPA and

CAPA (Egger et al., 2006; Angold et al., 1995). Parents reported how many traumatic

life events their child had been exposed to, as well as how many stressful life events the

child had experienced the previous three months (such as the death of a pet, divorce or

moving).

Parental anxiety. Parental anxiety was assessed using Beck's Anxiety

Inventory (BAI; Beck, Brown, Epstein, & Steer, 1988). The self-questionnaire consists

of 21 items ($\alpha= .82$) and distinguishes anxious diagnostic groups (e.g. generalized

anxiety disorder, panic disorder) from non-anxious diagnostic groups (e.g. major

depression or dysthymic disorder). BAI has shown psychometric properties (Beck et al.,

1988), even in community samples (Osman, Barrios, Aukes, Osman, & Markaway, 1993).

Temperament. Temperament was assessed by parents using the complete version of Children's Behavior Questionnaire (CBQ; Rothbart et al., 2001). Individual differences on 15 primary temperament characteristics are measured and transformed into a three-factor solution labelled Negative Affect (α = .82). CBQ has shown adequate internal consistency and good construct validity (Rothbart et al., 2001).

Peer victimization. A 5-point scale called Olweus Bully/Victim Questionnaire was used to assess peer victimization over a six-month period (Solberg & Olweus, 2003). The scale uses Olweus' definition of bullying, which is: "The intention to harm the victim, the repetitive nature of bullying, and the imbalance of power between the victim and the perpetrator(s)" (Solberg & Olweus, 2003, p. 8). Studies of the questionnaire have been mixed as some studies have found both satisfactory construct validity and general psychometrics (Kyriakides, Kaloyirou, & Lindsay, 2006; Solberg & Olweus, 2003) and modest support for concurrent validity (Lee & Cornell, 2009). Subscales include social disintegration in class/peer groups (α = .76), global negative self-evaluations (α = .84), depressive tendencies (α = .78), general aggression (α = .84), and antisocial behaviour (α = 84).

Statistical analysis

All analyses were performed using Statistical Package for the Social Sciences (IBM SPSS) version 23 to investigate the possible predictors of childhood anxiety. First, Pearson correlations were computed to analyse bivariate association between different study variables. Thereafter, the data was analysed using the regression analysis method Complex Samples General Linear Model (CSGLM). CSGLM produces linear

regression models including analysis of variance and covariance (Siller & Tompkins, 2006). CSGLM takes screen-stratified samples into account, therefore it is a viable method for a complex sample analysis. All factors were standardized prior to the regression analysis. As the TESS project had a screen-stratified sample, we weighted and counterbalanced the result. By doing this, the result presented here can be generalized to the sample population.

Results

Table 2 presents descriptive statistics of the study. Pre-analysis of negative life events depicted no association with anxiety at T3 and only weak correlations with anxiety and SES at T2. Therefore, the variable was removed early in analysis, and was therefore not a part of subsequent analyses. Symptoms of anxiety at ages 6 and 8 show moderate to low levels of correlation ($r = .34$, $p < 0.001$). All comorbid disorders were correlated with anxiety at T3. The symptoms of ADHD ($r = .38$, $p < 0.001$) and symptoms of ODD ($r = .31$, $p < 0.001$) resulted in moderate to small correlations while symptoms of depression ($r = .27$, $p < 0.001$) and symptoms of CD ($r = .12$, $p < 0.01$) revealed a small correlation. The temperamental factor negative affect ($r = .30$, $p < 0.001$) showed a moderate to small correlation. Other weak but statistically significant correlations were disorganized attachment ($r = .11$, $p < 0.05$), parental anxiety ($r = .19$, $p < 0.001$) and peer victimization ($r = .08$, $p < 0.05$), while social skills correlated negatively with anxiety at eight ($r = -.16$, $p < 0.001$). The factors that were not significantly correlated with anxiety at T3 were SES ($r = -.08$, $p = 0.054$), and gender ($r = -.07$, $p = 0.083$).

Table 2

Descriptive statistics of study variables

Variables	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Child factors																
Symptoms of anxiety – 8 years (T3)	1.01	1.39	1													
Symptoms of anxiety – 6 years (T2)	.89	1.29	.34***	1												
Negative affect	3.79	.57	.30***	.24***	1											
Attachment style D	.09	.16	.11*	.03	.00	1										
Social skills	56.93	13.41	-.16***	-.14***	-.03	-.19***	1									
Gender (% female)	1.50/50%	.50	-.07	-.09*	.05	-.25***	.22***	1								
Comorbidity																
Symptoms of ADHD	1.68	2.70	.38***	.39***	.17***	.00	-.30***	-.11**	1							
Symptoms of ODD	1.09	1.32	.31***	.37***	.33***	.07	-.18***	-.09*	.40***	1						
Symptoms of CD	.27	.54	.12**	.13***	.10**	.06	-.11**	-.10**	.20***	.36***	1					
Symptoms of Depression	.59	.90	.27***	.52***	.25***	.08*	-.15***	-.05	.38***	.47***	.17***	1				
Parental factors																
Parental anxiety	2.60	4.05	.19***	.22***	.22***	.22	-.13***	.01	.20***	.24***	.12**	.25***	1			
Socio-economic status	4.10	1.03	-.08	-.06	-.07	-.07	.11**	-.07*	-.06	-.00	-.04	-.05	-.14***	1		
Environmental factors																
Peer victimization	5.24	12.96	.08*	.14***	.04	.01	-.28***	-.08*	.25***	.20***	.05	.13***	.06	-.08	1	
Negative life events	1.57	.87	-.05	-.07*	-.02	.04	-.01	.00	-.02	.05	.04	.03	.07	.08*	.02	1

Note. Attention-Deficit Hyperactive Disorder (ADHD); Oppositional Defiant Disorder (ODD); Conduct Disorder (CD). $p \leq 0.05$, $p \leq 0.01$, $p \leq 0.001$

Table 3 presents the result of the CSGLM. Each factor was regressed upon anxiety symptoms of T3, unadjusted for other factors in the study. Seen in the first column of the table showing effect size, level of significance, standard error and the confidence interval. Most factors were significant at $p < .001$ with symptoms of anxiety at T3, with several exceptions; attachment style D ($p < .002$), SES ($p < .01$), symptoms of CD ($p < .002$) and peer victimization ($p = .039$). Non-significant variables at this point were gender ($p = .068$), parental anxiety ($p = .224$). Finally, to compare effects of different factors on anxiety at T3, each factor was adjusted for each other. As seen in the regression table, the factors that predicted symptoms of anxiety at T3 after this stage of analysis were symptoms of anxiety at T2 ($\beta = .21$, $p < .000$), symptoms of ADHD ($\beta = .22$, $p = .001$), negative affect ($\beta = .16$, $p < .000$) and attachment style D ($\beta = .08$, $p < .047$).

We found support for our first hypothesis where symptoms of anxiety, negative affect and disorganized attachment at six years were found to predict anxiety at eight. However, we did not find that social competence lead to decreased levels of anxiety at T3. Further, no evidence was found for any of the parental factors tested predicting child anxiety, thus not supporting our second hypothesis. Regarding our third hypothesis, support was not found for the causal link between peer victimization at T2 and symptoms of anxiety at T3. The total explained variance in the main regression analysis was calculated at $R^2 = .22$, indicating that 22% of the variance in symptoms of anxiety in eight-year-olds in this population can be explained by the factors included in this study.

Table 3

Predictors for six-year-old children (T2) to develop anxiety at eight (T3)

	Unadjusted					Adjusted				
	B	SE	95% CI		*P*	Beta	SE	95% CI		*p*
			Low	High				Low	High	
Child factors										
Symptoms of anxiety – 6 years (T2)	.32	.05	.23	.42	.000	.21	.06	.08	.33	**.001**
Negative affect	.27	.04	.20	.33	.000	.15	.05	.06	.24	**.001**
Attachment style D	.11	.04	.04	.18	.002	.08	.04	.00	.15	**.047**
Social skills	-.15	.03	-.22	-.09	.000	-.06	.04	-.13	.01	.114
Gender	-.05	.03	-.11	.00	.068					
Comorbidity										
Symptoms of ADHD	.39	.05	.29	.48	.000	.21	.07	.07	.35	**.003**
Symptoms of ODD	.29	.04	.20	.37	.000	.05	.05	-.06	.16	.353
Symptoms of CD	.11	.04	.04	.18	.002	.03	.05	-.07	.13	.357
Symptoms of Depression	.24	.04	.16	.32	.000	-.03	.05	-.13	.07	.570
Parental factors										
Parental anxiety	.16	.04	.12	.27	.000	.08	.06	-.03	.19	.161
Socio-economic status	-.08	.03	-.14	-.02	.009	-.01	.03	-.07	.05	.787
Environmental factors										
Peer victimization	.08	.04	.00	.16	.039	-.01	.06	-.13	.10	.812

Note. Attention-Deficit Hyperactive Disorder (ADHD); Oppositional Defiant Disorder (ODD); Conduct Disorder (CD). p ≤ 0.05, p ≤ 0.01, p ≤ 0.001. Gender is not included as a separate variable in the regression analysis as it is in the model design

Discussion

The primary goal of the current study was to investigate predictors of anxiety symptoms in early middle childhood, a developmental period characterized by the transition from day care and life at home, to starting school. To our knowledge, there is a lack of studies that explore anxiety in children over a small age gap. Also, the current is the first study that focuses exclusively on early middle childhood for the aforementioned variables in a large community sample while using clinical interview. This study extends the result of childhood anxiety from pre-school (Wichstrøm et al., 2013) to the early phases of middle childhood and support the predictive validity of symptoms of ADHD. Unlike Wichstrøm and colleagues, our findings support the

predictive value of attachment style D and negative affect in the development of later

anxiety, in addition to a stability of anxiety symtoms in children from 6 to 8 years

Child factors

   Anxiety. Our results show a stability in symptoms of anxiety, meaning that we

find symptoms of anxiety to possess a degree of stability at group level. On the surface,

the current results differ from Wichstrøm et al. (2013) who did not find stability in the

same community sample between 4 and 6-year-olds. Bufferd, Dougherty, Carlson, Rose

and Klein (2012) explained stability and increase in depressive and ADHD symptoms in

a community sample from preschool to school age as a combined result of children's

expanding ability to vocalize their internal thoughts and feelings, in addition to a

possible change in actual symptom rate as they meet more formal demands at school.

This might also be true for anxiety. In addition, our sample is older than the sample in

the study by Wichstrøm et al. (2013), making a case for influence of age. This is

supported by a study of trajectory differences in anxiety symptoms in ages 2-10 which

found comparatively higher levels of symptom increases over time compared to

decreases, which was more prominent before the age of 6 (Feng et al., 2008). The

stability in anxiety symptoms fit the tripartite model (Barlow, 2000) and development

where new challenges arise during an ecological transition to a school setting. The

biological and generalised psychological vulnerabilities would not change, but specific

psychological vulnerabilities would be changed in different learning experiences, thus

changing the expressions of anxiety. Caution must be applied in interpreting the results

as the current sample is a community sample and the overall rate of symptoms are low

(Wichstrøm et al., 2012), making the overall statistical power of the findings weak.

ADHD. Studies have traditionally shown ADHD to be one of several disorders comorbid with anxiety in childhood (Rapee et al., 2009). We extend the findings of Wichstrøm et al. (2013) by showing that symptoms of ADHD at 6 predict later symptoms of anxiety at 8. This strengthens the link between ADHD and anxiety, but results should be interpreted with care as it runs contrary to other research (Baldwin & Dadds, 2008; Burke, Loeber, Lahey, & Rathouz, 2005). Notably, both studies had older participants, 8-13 and 7-12 respectively, so age could factor into the results. It is possible the association could be explained by common risk factors (Lilienfield, 2003), or overlapping symptoms. Most likely, however, is that starting school is challenging for a child with symptoms of ADHD (Bufferd et al., 2012), and emotional regulation difficulties could act as vulnerability factor according to the tripartite model, providing an idea for how difficulties with ADHD and emotional regulation could further be differentiated into anxiety.

Other comorbid disorders. Apart from ADHD, our results did not link anxiety and behavioural disorders, contrary to existing evidence (Copeland et al., 2014; Costello et al., 2005; Kendall et al., 2010). While this study discovered a significant correlation between symptoms of depression and anxiety, we did not find that depressive symptoms predicted later anxiety, neither did Wichstrøm et al. (2013). We might be uncovering a difference in the median age of onset in different psychiatric illness. CD has a median age of onset at around 9 to 11 years (Kessler et al., 2007; Nock, Kazdin, Hiripi, & Kessler, 2006), while children with ODD has an onset around 7 years old (Kessler et al., 2007). It is unlikely however, seeing as Wichstrøm and colleagues (2012) found support for several psychiatric disorders in the same community sample where depressive disorders (2.0%) had higher prevalence than ADHD (1.8%). Also, certain studies have

seen early-onset ADHD before the age of 7 (Lin, Lo, Yang, & Gau, 2015). A more singular explanation for the lack of comorbidity predicting later anxiety is due to a community sample with a low prevalence of psychiatric disorders (Wichstrøm et al., 2012), compared to clinical studies.

Negative Affect. Negative affect did predict later anxiety in the current study, a finding consistent with research of temperamental factors and anxiety (Austin & Chorpita, 2004; De Pauw & Mervielde, 2010). The interaction of temperament and symptoms is complex. High levels of negative affect have traditionally been characterised by high degrees of subjective distress and unpleasureable feelings (Watson & Clark, 1988) and thus could be argued to underline the same basic construct as anxiety. Based on Barlow's model (Barlow, Allen, & Choate, 2004), negative affect is conceptualised as a known portion of a biological vulnerability, along with behavioural inhibition and neuroticism, predisposing children through specific psychological vulnerabilities and stressful events in early middle childhood, which in turn leads to certain disorders of anxiety. These results should be interpreted with care however, as further research is needed to nuance the pathways in which negative affect predict anxiety.

Social skills. Social skills did not come out as predictor of anxiety in the present work. An explanation could be that social skills rather operate as a moderator factor on other factors influencing anxiety, like poor social skills leading to peer victimization (Crawford & Manassis, 2011; Greco & Morris, 2005), which predisposes the child to symptoms of anxiety (Stapinski et al., 2015). As social skills were significantly associated with anxiety unadjusted, the lack of a regression effect could be due to

shared variance with other variables or the low levels of clinical anxiety in the sample, possibly making social skills less impactful.

Disorganized attachment. Our data shows that disorganized attachment did predict later symptoms of anxiety. Recall, this supports the findings of Madigan et al. (2016) over Groh et al. (2017). Madigan and colleagues discovered support for the hypothesis that disorganized attachment would interfere with the emotional capabilities and promote the development of anxiety, amongst other problems. That we found disorganized attachment to predict later anxiety while Wichstrøm et al., (2013) did not could reflect an increase in attachment security as children age (Kerns et al., 2011). However, more recent research has only found support for the strengthening of attachment security for externalizing problems (Groh et al., 2017) or suggested that increased age leads to decreased effect sizes (Madigan et al., 2016). Note, the current design did not allow for testing of different types of attachment, we therefore chose the attachment supported as the most problematic by a large body of data (Lyons-Ruth & Jacobvitz, 2008). It is possible that incorporating another insecure attachment style, in particular avoidant attachment (Groh et al., 2017; Madigan et al., 2016), could further nuance this discovery. We therefore recommend further clarification of the possible predictive validity of other attachment styles in early middle childhood.

Parental factors

Neither of the parental variables, parental anxiety and socio-economic status, significantly predicted later anxiety in the current regression model. Previous research found an association between parental anxiety and child anxiety (Rapee et al., 2009), even in the same sample population (Wichstrøm et al., 2013). Our results suggest an understanding of middle childhood as a time where children become less dependent on

their parents as they ascend new ecological spheres of life where they spend less time with their parents and more time with their peers in a new type of setting. Socio-economic status in the sample is generally above average, with above 95% of the sample are formally skilled workers or finished higher education in addition to over 78% of households have a combined income of at least 525' NOK (94' USD). It is therefore possible a sample with an average lower socio-economic status would have seen a different conclusion. Although the current sample is a low risk sample with low rates of psychological disorders (Wichstrøm et al., 2012), these results indicate a lessened parental influence as children enter early middle childhood.

Environmental factors

  Peer victimization. Our results do not support peer victimization predicting symptoms of anxiety in early middle childhood. Our results differ from several studies of peer victimization and anxiety (Reijntjes et al., 2010; Takizawa et al., 2014). As peer victimization is implicated in the development of anxiety in pre-school (Wichstrøm et al., 2013) and in adolescence (Molcho et al., 2009; Stapinski et al., 2015), it seems unlikely to be uniquely insignificant in early middle childhood. Particularly considering the social network of children incorporate more peer interaction than in school age compared to pre-school age (Lynch & Cicchetti, 1997). Another possibility is that peer victimization functions as a moderator variable between emotional regulation (Godleski et al., 2015) or ADHD (Stenseng, Belsky, Skalicka, & Wichstrøm, 2016) and anxiety. While it is possible that peer victimization does not predict later anxiety in early middle childhood, it is more likely our result is due to the aforementioned low risk sample.

  Negative life events. Negative life events did not predict later symptoms of anxiety according to our model. This is in line with other research from TESS on 4-year

olds (Reinfjell et al., 2016; Wichstrøm et al., 2013), suggesting that negative life events might be of less importance in a subclinical population at a young age. Our findings do not rule out a role for negative life events in later anxiety (Timmermans et al., 2010), and future research is needed to clarify the relationship.

In sum, our findings suggest that conceptualising anxiety in early middle childhood according to the tripartite model (Barlow et al., 2004) where anxiety can be understood as a dysregulation of the normative anxiety response system with internal risk factors (Weems, 2008). A plausible interpretation of these results suggests children with internal challenges handle the transition from kindergarten to early school worse than children without these adversities.

Strengths and limitations of this study

Conclusions should be drawn in light of its strengths and limitations. The present study has a number of strengths. The data is based on a community sample; thus the sample should be representative of the general population of children in Norway. Much of the earlier research has come from clinical studies with individuals seeking help and were subjected to help-seeking bias (Cohen & Cohen, 1984). The methodology is longitudinal with a developing community sample. The study has a good retention rate from T2 to T3, making a possible skewering based on missing data unlikely. The results are based on self-report, observations by raters, parent report and teacher report, which reduces the risk of shared method variance.

The current study also possesses several limitations. Due to the age of the children, for certain assessment we were unable to obtain children's self-report of their own psychiatric status. Most of the parental reports were also by a single parent. Although our sample population seems to be representative, the parents' level of

education was generally high, therefore it would be interesting to replicate these findings in other samples, including families with a lower socio-economic background and families from rural areas and different cultures. A limited number of predictors were included in the present study. Additional predictors, such as avoidant attachment (Groh et al., 2017) or behavioural inhibition (Broeren et al., 2014; Hudson et al., 2011) may play an important role in the development and maintenance of anxiety.

The current study has not explored the effects of possible moderator variables, such as if perceived high social competence moderate could moderate peer victimization as moderators were beyond the scope of this study, something that should be reassessed in new research of anxiety in middle childhood. Possible interactions between predictors could give us a more detailed understanding of the etiologic nature of anxiety and its particularities in early middle childhood. It is also possible moderator analysis would illuminate variables working in a way this research methodology did not catch. The structural interviews PAPA and CAPA only assess the recent past of three months preceding the interview, and it is possible therefore to underestimate the total number of psychiatric occurrences between two points of measurement. Measurement of children's social skills were only done by teachers in the first grade where the teacher might not be familiar with the child yet. While missing value analysis generally have been performed in other studies of TESS, it was not performed in this study and it is possible the decline of participants was not random, thus influencing our results. However, limited selective attrition have generally been reported (Hygen et al., 2014; Wichstrøm et al., 2013). Additionally, even for factors that predicted attrition, the combined effect was found to be limited (Reinfjell et al., 2016). Finally, replication is paramount to validate and further understand the findings of the current study.

Conclusions and implications

Although progress has been made in relation to understanding the complexity of symptoms and disorders in children, understanding the specifity of disorders such as anxiety at different stages in development can deepen our knowledge about anxiety and hopefully contribute to earlier discovery of symptoms and prevention.

In conclusion, this study found that symptoms of anxiety and ADHD, negative affect and peer victimization predict later anxiety in early middle childhood. In general, we found factors within the child itself as proponents for the development for later anxiety. Identifying children at risk and develop targeted interventions might help reduce the prevalence of children struggling with anxiety in early middle childhood. The results propose a number of factors that may be appropriate targets for early intervention, such as interventions aimed toward promoting secure attachment through video feedback intervention to promote positive parenting and sensitive discipline (Van Zeijl et al., 2006), early cognitive behaviour therapy for anxiety (Manassis et al., 2014), EMOTION, a 20 session program focused on building skills and using them to address anxiety and depression (Martinsen, Kendall, Stark, & Neumer, 2016) or using these factors to identify high-risk children in early middle childhood for targeted prevention programs.

References

Allen, J. L., Rapee, R. M., & Sandberg, S. (2008). Severe life events and chronic

adversities as antecedents to anxiety in children: A matched control study. *Journal of

Abnormal Child Psychology*, *36*(7), 1047-1056. Https://doi.org/10.1007/s10802-008-

9240-x

American Psychiatric Association (1994). *Diagnostic and statistical manual of mental

disorders (fourth edition).* Washington DC: American Psychiatric Association.

Ambrosini, P. J., Bennett, D. S., & Elia, J. (2013). Attention deficit hyperactivity

disorder characteristics: II. Clinical correlates of irritable mood. *Journal of affective

disorders*, *145*(1), 70-76. Https://doi.org/10.1016/j.jad.2012.07.014

Andrews, N. C., Hanish, L. D., Fabes, R. A., & Martin, C. L. (2014). With whom and

where you play: Preschoolers' social context predicts peer victimization. *Social

development*, *23*(2), 357-375. Https://doi.org/10.1111/sode.12051

Angold, A., Erkanli, A., Copeland, W., Goodman, R., Fisher, P. W., & Costello, E. J.

(2012). Psychiatric diagnostic interviews for children and adolescents: A

comparative study. *Journal of the American Academy of Child and Adolescent

Psychiatry, 51*(5), 506-517. Https://doi.org/10.1016/j.jaac.2012.02.020

Angold, A., Erkanli, A., Farmer, E. M., Fairbank, J. A., Burns, B. J., Keeler, G., &

Costello, E. J. (2002). Psychiatric disorder, impairment, and service use in rural

African American and white youth. *Archives of general psychiatry*, *59*(10), 893-901.

Https://doi.org/10.1001/archpsyc.59.10.893

Angold, A., Prendergast, M., Cox, A., Harrington, R., Simonoff, E., & Rutter, M.

(1995). The child and adolescent psychiatric assessment (CAPA). *Psychological

medicine, 25*(4), 739-753. Https://doi.org/10.1017/S003329170003498X

Austin, A. A., & Chorpita, B. F. (2004). Temperament, anxiety, and depression:

Comparisons across five ethnic groups of children. *Journal of Clinical Child and*

Adolescent Psychology, *33*(2), 216-226.

Https://doi.org/10.1207/s15374424jccp3302_2

Baldwin, J. S., & Dadds, M. R. (2008). Examining alternative explanations of the

covariation of ADHD and anxiety symptoms in children: A community study.

Journal of Abnormal Child Psychology, 36(1), 67-79.

Https://doi.org/10.1001/archpsyc.59.10.893

Barker, E. D., Boivin, M., Brendgen, M., Fontaine, N., Arseneault, L., Vitaro, F., ... &

Tremblay, R. E. (2008). Predictive validity and early predictors of peer-victimization

trajectories in preschool. *Archives of General Psychiatry, 65*(10), 1185-1192.

Https://doi.org/10.1001/archpsyc.65.10.1185

Barlow, D. H. (1988). *Anxiety and its disorders: The nature and treatment of anxiety*

and panic. New York: Guilford Press.

Barlow, D. (2000). Unraveling the mysteries of anxiety and its disorders from the

perspective of emotion theory. *American Psychologist, 55*(11), 1247–1263.

Barlow, D. H., Allen, L. B., & Choate, M. L. (2004). Toward a Unified Treatment for

Emotional Disorders. *Behavior Therapy, 35*(2), 205-230.

Https://doi.org/10.1016/S0005-7894(04)80036-4

Barone, L., Del Giudice, M., Fossati, A., Manaresi, F., Actis Perinetti, B., Colle, L., &

Veglia, F. (2009). Methods & measures: Psychometric properties of the Manchester

child attachment story task: An Italian multicentre study. *International Journal of*

Behavioral Development, *33*(2), 185-190.

Https://doi.org/10.1177/0165025409103134

Beck, A. T., Epstein, N., Brown, G., & Steer, R. A. (1988). An inventory for measuring clinical anxiety: Psychometric properties. *Journal of consulting and clinical psychology, 56*(6), 893-897. Https://dx.doi.org/10.1037/0022-006X.56.6.893

Beesdo, K., Knappe, S., & Pine, D. S. (2009). Anxiety and anxiety disorders in children and adolescents: Developmental issues and implications for DSM-V. *Psychiatric Clinics*, *32*(3), 483-524. Https://doi.org/10.1016/j.psc.2009.06.002

Broeren, S., Newall, C., Dodd, H. F., Locker, R., & Hudson, J. L. (2014). Longitudinal investigation of the role of temperament and stressful life events in childhood anxiety. *Development and psychopathology*, *26*(2), 437-449. Https://doi.org/10.1017/S0954579413000989

Bronfenbrenner, U. (1977). Toward an experimental ecology of human development. *American psychologist*, *32*(7), 513-531. Https://dx.doi.org/10.1037/0003-066X.32.7.513

Brumariu, L. E., & Kerns, K. A. (2008). Mother–child attachment and social anxiety symptoms in middle childhood. *Journal of applied developmental psychology, 29*(5), 393-402. Https://doi.org/10.1016/j.appdev.2008.06.002

Brumariu, L. E., Kerns, K. A., & Seibert, A. (2012). Mother–child attachment, emotion regulation, and anxiety symptoms in middle childhood. *Personal Relationships*, *19*(3), 569-585. Https://doi.org/10.1111/j.1475-6811.2011.01379.x

Bufferd, S. J., Dougherty, L. R., Carlson, G. A., & Klein, D. N. (2011). Parent-reported mental health in preschoolers: Findings using a diagnostic interview. *Comprehensive psychiatry, 52*(4), 359-369. Https://doi.org/10.1016/j.comppsych.2010.08.006

Bufferd, S. J., Dougherty, L. R., Carlson, G. A., Rose, S., & Klein, D. N. (2012).

Psychiatric disorders in preschoolers: continuity from ages 3 to 6. *American Journal*

of Psychiatry, *169*(11), 1157-1164. Https://doi.org/10.1176/appi.ajp.2012.12020268

Burke, J. D., Loeber, R., Lahey, B. B., & Rathouz, P. J. (2005). Developmental

transitions among affective and behavioral disorders in adolescent boys. *Journal of*

Child Psychology and Psychiatry, *46*(11), 1200-1210.

Https://doi.org/10.1111/j.1469-7610.2005.00422.x

Canino, G., Shrout, P. E., Rubio-Stipec, M., Bird, H. R., Bravo, M., Ramírez, R., ... &

Ribera, J. (2004). The DSM-IV rates of child and adolescent disorders in Puerto

Rico: Prevalence, correlates, service use, and the effects of impairment. *Archives of*

general psychiatry, *61*(1), 85-93. Https://doi.org/10.1001/archpsyc.61.1.85

Carballo, J. J., Baca-Garcia, E., Blanco, C., Perez-Rodriguez, M. M., Arriero, M. A. J.,

Artes-Rodriguez, A., ... & Oquendo, M. A. (2010). Stability of childhood anxiety

disorder diagnoses: A follow-up naturalistic study in psychiatric care. *European*

child & adolescent psychiatry, 19(4), 395-403. Https://doi.org/10.1007/s00787-009-

0064-1

Carrion, V. G., Weems, C. F., & Reiss, A. L. (2007). Stress predicts brain changes in

children: A pilot longitudinal study on youth stress, posttraumatic stress disorder, and

the hippocampus. *Pediatrics*, *119*(3), 509-516. Https://doi.org/10.1542/peds.2006-

2028

Cartwright-Hatton, S., McNicol, K., & Doubleday, E. (2006). Anxiety in a neglected

population: Prevalence of anxiety disorders in pre-adolescent children. *Clinical*

psychology review, 26(7), 817-833. Https://doi.org/10.1016/j.cpr.2005.12.002

Clark, L. A., & Watson, D. (1991). Tripartite model of anxiety and depression: Psychometric evidence and taxonomic implications. *Journal of abnormal psychology, 100*(3), 316-336.

Cohen, P., & Cohen, J. (1984). The clinician's illusion. *Archives of general psychiatry, 41*(12), 1178-1182. Https://doi.org/10.1001/archpsyc.1984.01790230064010

Colonnesi, C., Draijer, E. M., Stams, G. M., Van der Bruggen, C. O., Bögels, S. M., & Noom, M. J. (2011). The relation between insecure attachment and child anxiety: A meta-analytic review. *Journal of Clinical Child & Adolescent Psychology, 40*(4), 630-645. Https://doi.org/10.1080/15374416.2011.581623

Copeland, W. E., Angold, A., Shanahan, L., & Costello, E. J. (2014). Longitudinal patterns of anxiety from childhood to adulthood: The Great Smoky Mountains Study. *Journal of the American Academy of Child & Adolescent Psychiatry, 53*(1), 21-33. Https://doi.org/10.1016/j.jaac.2013.09.017

Costello, E. J., Egger, H. L., & Angold, A. (2005). The developmental epidemiology of anxiety disorders: Phenomenology, prevalence, and comorbidity. *Child and adolescent psychiatric clinics of North America, 14*(4), 631-648. Https://doi.org/10.1016/j.chc.2005.06.003

Costello, E. J., Farmer, E. M., Angold, A., Burns, B. J., & Erkanli, A. (1997). Psychiatric disorders among American Indian and white youth in Appalachia: The Great Smoky Mountains Study. *American journal of public health, 87*(5), 827-832. Https://doi.org/10.2105/AJPH.87.5.827

Crawford, A. M., & Manassis, K. (2011). Anxiety, social skills, friendship quality, and peer victimization: An integrated model. *Journal of anxiety disorders, 25*(7), 924-931. Https://doi.org/10.1016/j.janxdis.2011.05.005

Crone, M. R., Vogels, A. G., Hoekstra, F., Treffers, P. D., & Reijneveld, S. A. (2008). A comparison of four scoring methods based on the parent-rated Strengths and Difficulties Questionnaire as used in the Dutch preventive child health care system. *BMC Public Health, 8*(1), 106. Https://doi.org/10.1186/1471-2458-8-106

De Bellis, M. D., Keshavan, M. S., Clark, D. B., Casey, B. J., Giedd, J. N., Boring, A. M., ... & Ryan, N. D. (1999). Developmental traumatology part II: Brain development. *Biological psychiatry*, *45*(10), 1271-1284. Https://doi.org/10.1016/S0006-3223(99)00045-1

Degnan, K. A., Almas, A. N., & Fox, N. A. (2010). Temperament and the environment in the etiology of childhood anxiety. *Journal of Child Psychology and Psychiatry, 51*(4), 497-517. Https://doi.org/10.1111/j.1469-7610.2010.02228.x

Del Giudice, M. (2014). Middle childhood: An evolutionary-developmental synthesis. *Child Development Perspectives*, *8*(4), 193-200. Https://doi.org/10.1111/cdep.12084

De Pauw, S. S., & Mervielde, I. (2010). Temperament, personality and developmental psychopathology: A review based on the conceptual dimensions underlying childhood traits. *Child Psychiatry & Human Development, 41*(3), 313-329. Https://doi.org/10.1007/s10578-009-0171-8

Dockett, S., & Perry, B. (1999). Starting school: What do the children say?. *Early Child Development and Care*, *159*(1), 107-119. Https://doi.org/10.1080/0300443991590109

Egger, H. L., & Angold, A. (2006). Common emotional and behavioral disorders in preschool children: Presentation, nosology, and epidemiology. *Journal of Child Psychology and Psychiatry*, *47*, 313-337. Https://doi.org/10.1111/j.1469-7610.2006.01618.x

Egger, H. L., Erkanli, A., Keeler, G., Potts, E., Walter, B. K., & Angold, A. (2006).

Test-retest reliability of the preschool age psychiatric assessment (PAPA). *Journal of the American Academy of Child & Adolescent Psychiatry, 45*(5), 538-549. Https://doi.org/10.1097/01.chi.0000205705.71194.b8

Ehrenreich, J. T., & Gross, A. M. (2002). Biased attentional behavior in childhood anxiety: A review of theory and current empirical investigation. *Clinical Psychology Review*, *22*(7), 991-1008. Https://doi.org/10.1016/S0272-7358(01)00123-4

Eisenberg, N., Spinrad, T. L., & Eggum, N. D. (2010). Emotion-related self-regulation and its relation to children's maladjustment. *Annual review of clinical psychology*, *6*, 495-525. Https://doi.org/10.1146/annurev.clinpsy.121208.131208

Eisenberg, N., Valiente, C., Spinrad, T. L., Cumberland, A., Liew, J., Reiser, M., ... & Losoya, S. H. (2009). Longitudinal relations of children's effortful control, impulsivity, and negative emotionality to their externalizing, internalizing, and co-occurring behavior problems. *Developmental psychology*, *45*(4), 988-1008. Https://doi.org/10.1037/a0016213

Eley, T. C., & Stevenson, J. (2000). Specific life events and chronic experiences differentially associated with depression and anxiety in young twins. *Journal of abnormal child psychology*, *28*(4), 383-394. Https://doi.org/10.1023/A:1005173127117

Ezpeleta, L., Keeler, G., Erkanli, A., Costello, E. J., & Angold, A. (2001). Epidemiology of psychiatric disability in childhood and adolescence. *The Journal of Child Psychology and Psychiatry and Allied Disciplines*, *42*(7), 901-914. Https://doi.org/10.1111/1469-7610.00786

Feng, X., Shaw, D. S., & Silk, J. S. (2008). Developmental trajectories of anxiety symptoms among boys across early and middle childhood. *Journal of abnormal psychology, 117*(1), 32-47. Https://doi.org/10.1037/0021-843X.117.1.32

Ford, T., Goodman, R., & Meltzer, H. (2003). The British child and adolescent mental health survey 1999: The prevalence of DSM-IV disorders. *Journal of the American academy of child & adolescent psychiatry*, *42*(10), 1203-1211. Https://doi.org/10.1097/00004583-200310000-00011

Ford, T., Goodman, R., & Meltzer, H. (2004). The relative importance of child, family, school and neighbourhood correlates of childhood psychiatric disorder. *Social psychiatry and psychiatric epidemiology*, *39*(6), 487-496. Https://doi.org/10.1007/s00127-004-0782-0

Fox, J. K., Halpern, L. F., Ryan, J. L., & Lowe, K. A. (2010). Stressful life events and the tripartite model: Relations to anxiety and depression in adolescent females. *Journal of Adolescence*, *33*(1), 43-54. Https://doi.org/10.1016/j.adolescence.2009.05.009

Franco, N., & Levitt, M. J. (1998). The social ecology of middle childhood: Family support, friendship quality, and self-esteem. *Family relations*, 315-321. Https://doi.org/10.2307/585262

Franz, L., Angold, A., Copeland, W., Costello, E. J., Towe-Goodman, N., & Egger, H. (2013). Preschool anxiety disorders in pediatric primary care: Prevalence and comorbidity. *Journal of the American Academy of Child & Adolescent Psychiatry, 52*(12), 1294-1303. Https://doi.org/10.1016/j.jaac.2013.09.008

Godleski, S. A., Kamper, K. E., Ostrov, J. M., Hart, E. J., & Blakely-McClure, S. J. (2015). Peer victimization and peer rejection during early childhood. *Journal of*

Clinical Child & Adolescent Psychology, *44*(3), 380-392.

Https://doi.org/10.1080/15374416.2014.940622

Goodman, R. (1997). The Strengths and Difficulties Questionnaire: A research note.

Journal of child psychology and psychiatry, 38(5), 581-586.

Https://doi.org/10.1111/j.1469-7610.1997.tb01545.x

Goodman, R. (2001). Psychometric properties of the strengths and difficulties

questionnaire. *Journal of the American Academy of Child & Adolescent Psychiatry*,

40(11), 1337-1345. Https://doi.org/10.1097/00004583-200111000-00015

Goodman, R., Ford, T., Simmons, H., Gatward, R., & Meltzer, H. (2000). Using the

Strengths and Difficulties Questionnaire (SDQ) to screen for child psychiatric

disorders in a community sample. *The British Journal of Psychiatry, 177*(6), 534-

539. Https://doi.org/10.1192/bjp.177.6.534

Greco, L. A., & Morris, T. L. (2005). Factors influencing the link between social

anxiety and peer acceptance: Contributions of social skills and close friendships

during middle childhood. *Behavior Therapy, 36*(2), 197-205.

Https://doi.org/10.1016/S0005-7894(05)80068-1

Green, J., Stanley, C., Smith, V., & Goldwyn, R. (2000). A new method of evaluating

attachment representations in young school-age children: The Manchester Child

Attachment Story Task. *Attachment & Human Development*, *2*(1), 48-70.

Https://doi.org/10.1080/146167300361318

Gresham, F., & Elliot, S. (1990). *Manual for the social skills rating system.* Circle

Pines, MN: American Guidance Service.

Groh, A. M., Fearon, R. M., IJzendoorn, M. H., Bakermans-Kranenburg, M. J., &

Roisman, G. I. (2017). Attachment in the early life course: Meta-analytic evidence

for its role in socioemotional development. *Child Development Perspectives*, *11*(1),

70-76. Https://doi.org/10.1111/cdep.12213

Harold, G. T., & Hay, D. F. (2005). Normal development in middle childhood.

Psychiatry, *4*(6), 3-5. Https://doi.org/10.1383/psyt.4.6.3.66355

Heiervang, E., Stormark, K. M., Lundervold, A. J., Heimann, M., Goodman, R.,

Posserud, M. B., ... & Gillberg, C. (2007). Psychiatric disorders in Norwegian 8-to

10-year-olds: An epidemiological survey of prevalence, risk factors, and service use.

Journal of the American Academy of Child & Adolescent Psychiatry, *46*(4), 438-447.

Https://doi.org/10.1097/chi.0b013e31803062bf

Hudson, J. L., Dodd, H. F., Lyneham, H. J., & Bovopoulous, N. (2011). Temperament

and family environment in the development of anxiety disorder: Two-year follow-up.

Journal of the American Academy of Child & Adolescent Psychiatry, *50*(12), 1255-

1264. Https://doi.org/10.1016/j.jaac.2011.09.009

Husby, S. M., & Wichstrøm, L. (2017). Interrelationships and continuities in symptoms

of oppositional defiant and conduct disorders from age 4 to 10 in the community.

Journal of abnormal child psychology, 45(5), 947-958.

Https://doi.org/10.1007/s10802-016-0210-4

Hygen, B. W., Guzey, I. C., Belsky, J., Berg-Nielsen, T. S., & Wichstrøm, L. (2014).

Catechol-O-methyltransferase Val158Met genotype moderates the effect of

disorganized attachment on social development in young children. *Development and

psychopathology*, *26*, 947-961. Https://doi.org/10.1017/S0954579414000492

Jozefiak, T. & Berg-Nielsen, T. S. (2016). Måleegenskaper ved den norske versjonen av

Child and Adolescent Psychiatric Assessment (CAPA) og Preschool Age Psychiatric

Assessment. *PsykTestBarn,* 2016(1), 1-12. Https://doi.org/10.21337/0047

Kendall, P. C., Compton, S. N., Walkup, J. T., Birmaher, B., Albano, A. M., Sherrill, J., ... & Keeton, C. (2010). Clinical characteristics of anxiety disordered youth. *Journal of anxiety disorders*, *24*(3), 360-365. Https://doi.org/10.1016/j.janxdis.2010.01.009

Kendall, P. C., Safford, S., Flannery-Schroeder, E., & Webb, A. (2004). Child anxiety treatment: outcomes in adolescence and impact on substance use and depression at 7.4-year follow-up. *Journal of consulting and clinical psychology*, *72*(2), 276-287. Https://doi.org/10.1037/0022-006X.72.2.276

Kerns, K. A., Siener, S., & Brumariu, L. E. (2011). Mother–child relationships, family context, and child characteristics as predictors of anxiety symptoms in middle childhood. *Development and Psychopathology*, *23*(2), 593-604. Https://doi.org/10.1017/S0954579411000228

Kessler, R. C., Amminger, G. P., Aguilar-Gaxiola, S., Alonso, J., Lee, S., & Ustun, T. B. (2007). Age of onset of mental disorders: A review of recent literature. *Current opinion in psychiatry*, *20*(4), 359-364. Https://doi.org/10.1097/YCO.0b013e32816ebc8c

Kyriakides, L., Kaloyirou, C., & Lindsay, G. (2006). An analysis of the Revised Olweus Bully/Victim Questionnaire using the Rasch measurement model. *British Journal of Educational Psychology*, *76*(4), 781-801. Https://doi.org/10.1348/000709905X53499

Ladd, G. W., & Dinella, L. M. (2009). Continuity and change in early school engagement: Predictive of children's achievement trajectories from first to eighth grade? *Journal of Educational Psychology*, *101*(1), 190-206. Https://doi.org/10.1037/a0013153

La Paro, K. M., & Pianta, R. C. (2000). Predicting children's competence in the early

school years: A meta-analytic review. *Review of educational research*, *70*(4), 443-

484. Https://doi.org/10.3102/00346543070004443

Larson, K., Russ, S. A., Kahn, R. S., & Halfon, N. (2011). Patterns of comorbidity,

functioning, and service use for US children with ADHD, 2007. *Pediatrics, 127*(1),

462-470. Https://doi.org/10.1542/peds.2010-0165

Last, C. G., Hansen, C., & Franco, N. (1997). Anxious children in adulthood: A

prospective study of adjustment. *Journal of the American Academy of Child &

Adolescent Psychiatry*, *36*(5), 645-652. Https://doi.org/10.1097/00004583-

199705000-00015

Lee, T. & Cornell, D. (2009). Concurrent validity of the Olweus bully/victim

questionnaire. *Journal of school violence, 9*(1), 56-73.

Https://doi.org/10.1080/15388220903185613

Lilienfeld, S.O. (2003). Comorbidity between and within childhood externalizing and

internalizing disorders: Reflections and directions. *Journal of Abnormal Child

Psychology, 31*(3), 285–291. Https://doi.org/10.1023/A:1023229529866

Lin, Y. J., Lo, K. W., Yang, L. K., & Gau, S. S. F. (2015). Validation of DSM-5 age-of-

onset criterion of attention deficit/hyperactivity disorder (ADHD) in adults:

Comparison of life quality, functional impairment, and family function. *Research in

developmental disabilities*, *47*, 48-60. Https://doi.org/10.1016/j.ridd.2015.07.026

Lynch, M., & Cicchetti, D. (1997). Children's relationships with adults and peers: An

examination of elementary and junior high school students. *Journal of School

Psychology, 35*(1), 81-99. Https://doi.org/10.1016/S0022-4405(96)00031-3

Lyons-Ruth, K., & Jacobvitz, D. (2008). Attachment disorganization: Genetic factors, parenting contexts, and developmental transformation from infancy to adulthood. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp. 666-697). New York, NY, US: Guilford Press.

Madigan, S., Brumariu, L. E., Villani, V., Atkinson, L., & Lyons-Ruth, K. (2016). Representational and questionnaire measures of attachment: A meta-analysis of relations to child internalizing and externalizing problems. *Psychological Bulletin, 142*(4), 367-399. Https://doi.org/10.1037/bul0000029

Mah, V. K., & Ford-Jones, E. L. (2012). Spotlight on middle childhood: Rejuvenating the 'forgotten years'. *Paediatrics & child health, 17*(2), 81-83. Https://doi.org/10.1093/pch/17.2.81

Manassis, K., Lee, T. C., Bennett, K., Zhao, X. Y., Mendlowitz, S., Duda, S., ... & Wood, J. J. (2014). Types of parental involvement in CBT with anxious youth: A preliminary meta-analysis. *Journal of consulting and clinical psychology*, *82*(6), 1163-1172. Https://doi.org/10.1037/a0036969

Martinsen, K. D., Kendall, P. C., Stark, K., & Neumer, S. P. (2016). Prevention of anxiety and depression in children: acceptability and feasibility of the transdiagnostic EMOTION program. *Cognitive and Behavioral Practice, 23*(1), 1-13. Https://doi.org/10.1016/j.cbpra.2014.06.005

McLean, C. P., Asnaani, A., Litz, B. T., & Hofmann, S. G. (2011). Gender differences in anxiety disorders: Prevalence, course of illness, comorbidity and burden of illness. *Journal of psychiatric research*, *45*(8), 1027-1035. Https://doi.org/10.1016/j.jpsychires.2011.03.006

McLeod, B. D., Wood, J. J., & Weisz, J. R. (2007). Examining the association between parenting and childhood anxiety: A meta-analysis. *Clinical psychology review*, *27*(2), 155-172. Https://doi.org/10.1016/j.cpr.2006.09.002

Micco, J. A., Henin, A., Mick, E., Kim, S., Hopkins, C. A., Biederman, J., & Hirshfeld-Becker, D. R. (2009). Anxiety and depressive disorders in offspring at high risk for anxiety: A meta-analysis. *Journal of anxiety disorders*, *23*(8), 1158-1164. Https://doi.org/10.1016/j.janxdis.2009.07.021

Minnis, H., Read, W., Connolly, B., Burston, A., Schumm, T. S., Putter-Lareman, S., & Green, J. (2010). The Computerised Manchester Child Attachment Story Task: a novel medium for assessing attachment patterns. *International journal of methods in psychiatric research*, *19*(4), 233-242. Https://doi.org/10.1002/mpr.324

Molcho, M., Craig, W., Due, P., Pickett, W., Harel-Fisch, Y., & Overpeck, M. (2009). Cross-national time trends in bullying behaviour 1994–2006: Findings from Europe and North America. *International journal of public health*, *54*, 225-234. Https://doi.org/10.1007/s00038-009-5414-8

Murray, L., Creswell, C., & Cooper, P. J. (2009). The development of anxiety disorders in childhood: An integrative review. *Psychological medicine*, *39*(9), 1413-1423. Https://doi.org/10.1017/S0033291709005157

Nigg, J. T. (2006). Temperament and developmental psychopathology. *Journal of Child Psychology and Psychiatry*, *47*(3-4), 395-422. Https://doi.org/10.1111/j.1469-7610.2006.01612.x

Nock, M. K., Kazdin, A. E., Hiripi, E., & Kessler, R. C. (2006). Prevalence, subtypes, and correlates of DSM-IV conduct disorder in the National Comorbidity Survey

Replication. *Psychological medicine*, *36*(5), 699-710.

Https://doi.org/10.1017/S0033291706007082

Osman, A., Barrios, F. X., Aukes, D., Osman, J. R., & Markway, K. (1993). The Beck

Anxiety Inventory: Psychometric properties in a community population. *Journal of*

Psychopathology and Behavioral Assessment, 15(4), 287-297.

Https://doi.org/10.1007/BF00965034

Phillips, N. K., Hammen, C. L., Brennan, P. A., Najman, J. M., & Bor, W. (2005). Early

adversity and the prospective prediction of depressive and anxiety disorders in

adolescents. *Journal of abnormal child psychology*, *33*(1), 13-24.

Https://doi.org/10.1007/s10802-005-0930-3

Polanczyk, G. V., Salum, G. A., Sugaya, L. S., Caye, A., & Rohde, L. A. (2015).

Annual Research Review: A meta-analysis of the worldwide prevalence of mental

disorders in children and adolescents. *Journal of Child Psychology and Psychiatry*,

56(3), 345-365. Https://doi.org/10.1111/jcpp.12381

Rapee, R. M. (1997). Potential role of childrearing practices in the development of

anxiety and depression. *Clinical psychology review*, *17*(1), 47-67.

Https://doi.org/10.1016/S0272-7358(96)00040-2

Rapee, R. M., Schniering, C. A., & Hudson, J. L. (2009). Anxiety disorders during

childhood and adolescence: Origins and treatment. *Annual review of clinical*

psychology, 5, 311-341. Https://doi.org/10.1146/annurev.clinpsy.032408.153628

Reijntjes, A., Kamphuis, J. H., Prinzie, P., & Telch, M. J. (2010). Peer victimization and

internalizing problems in children: A meta-analysis of longitudinal studies. *Child*

abuse & neglect, *34*(4), 244-252. Https://doi.org/10.1016/j.chiabu.2009.07.009

Reinfjell, T., Kårstad, S., Berg-Nielsen, T., Luby, J., & Wichstrøm, L. (2016).

Predictors of change in depressive symptoms from preschool to first grade.

Development and Psychopathology, 28, 1517-1530.

Https://doi.org/10.1017/S0954579415001170

Rothbart, M. K., Ahadi, S. A., Hershey, K. L., & Fisher, P. (2001). Investigations of

temperament at three to seven years: The Children's Behavior Questionnaire. *Child

development*, *72*(5), 1394-1408. Https://doi.org/10.1111/1467-8624.00355

Rubie-Davies, C. M., Flint, A., & McDonald, L. G. (2012). Teacher beliefs, teacher

characteristics, and school contextual factors: What are the relationships? *British

Journal of Educational Psychology, 82*(2), 270-288. Https://doi.org/10.1111/j.2044-

8279.2011.02025.x

Schwartz, D., Lansford, J. E., Dodge, K. A., Pettit, G. S., & Bates, J. E. (2015). Peer

victimization during middle childhood as a lead indicator of internalizing problems

and diagnostic outcomes in late adolescence. *Journal of Clinical Child & Adolescent

Psychology*, *44*(3), 393-404. Https://doi.org/10.1080/15374416.2014.881293

Siller, A. B., & Tompkins, L. (2006, March). The big four: analyzing complex sample

survey data using SAS, SPSS, STATA, and SUDAAN. In *Proceedings of the Thirty-

first Annual SAS® Users Group International Conference* (pp. 26-29). SAS Institute

Inc.

Skalická, V., Stenseng, F., & Wichstrøm, L. (2015). Reciprocal relations between

student–teacher conflict, children's social skills and externalizing behavior: A three-

wave longitudinal study from preschool to third grade. *International Journal of

Behavioral Development*, *39*(5), 413-425.

Https://doi.org/10.1177/0165025415584187

Solberg, M. E., & Olweus, D. (2003). Prevalence estimation of school bullying with the

Olweus Bully/Victim Questionnaire. *Aggressive behavior, 29*(3), 239-268.

Https://doi.org/10.1002/ab.10047

Spence, S. H., & Rapee, R. M. (2016). The etiology of social anxiety disorder: An

evidence-based model. *Behaviour Research and Therapy, 86*, 50-67.

Https://doi.org/10.1016/j.brat.2016.06.007

Stapinski, L. A., Araya, R., Heron, J., Montgomery, A. A., & Stallard, P. (2015). Peer

victimization during adolescence: concurrent and prospective impact on symptoms of

depression and anxiety. *Anxiety, Stress, & Coping, 28*(1), 105-120.

Https://doi.org/10.1080/10615806.2014.962023

Statistics Norway (2017a). *Educational Attainment of the population.* Retrieved

01.05.17 from http://www.ssb.no/en/utdanning/statistikker/utniv/aar

Statistics Norway (2017b). *Families and households.* Retrieved 01.05.17 from

https://www.ssb.no/en/familie

Steel, Z., Marnane, C., Iranpour, C., Chey, T., Jackson, J. W., Patel, V., & Silove, D.

(2014). The global prevalence of common mental disorders: a systematic review and

meta-analysis 1980–2013. *International journal of epidemiology*, *43*(2), 476-493.

Https://doi.org/10.1093/ije/dyu038

Stenseng, F., Belsky, J., Skalicka, V., & Wichstrøm, L. (2016). Peer rejection and

attention deficit hyperactivity disorder symptoms: Reciprocal relations through ages

4, 6, and 8. *Child development*, *87*(2), 365-373. Https://doi.org/10.1111/cdev.12471

Takizawa, R., Maughan, B., & Arseneault, L. (2014). Adult health outcomes of

childhood bullying victimization: evidence from a five-decade longitudinal British

birth cohort. *American journal of psychiatry, 171*(7), 777-784.

Https://doi.org/10.1176/appi.ajp.2014.13101401

Thompson, A., Issakidis, C., & Hunt, C. (2008). Delay to seek treatment for anxiety and

mood disorders in an Australian clinical sample. *Behaviour Change*, *25*(2), 71-84.

Https://doi.org/10.1375/bech.25.2.71

Timmermans, M., van Lier, P. A., & Koot, H. M. (2010). The role of stressful events in

the development of behavioural and emotional problems from early childhood to late

adolescence. *Psychological Medicine, 40*(10), 1659-1668.

Https://doi.org/10.1017/S0033291709992091

Van Zeijl, J., Mesman, J., Van IJzendoorn, M. H., Bakermans-Kranenburg, M. J.,

Juffer, F., Stolk, M. N., . . . Alink, L. R. A. (2006). Attachment-based intervention

for enhancing sensitive discipline in mothers of 1- to 3-year-old children at risk for

externalizing behavior problems: A randomized controlled trial. *Journal of*

Consulting and Clinical Psychology, 74(6), 994-1005. Https://doi.org/10.1037/0022-

006X.74.6.994

Watson, D., & Clark, L. A. (1984). Negative affectivity: The disposition to experience

aversive emotional states. *Psychological bulletin*, *96*(3), 465-490.

Https://dx.doi.org/10.1037/0033-2909.96.3.465

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief

measures of positive and negative affect: The PANAS scales. *Journal of personality*

and social psychology, *54*(6), 1063-1070.

Weems, C. F. (2008). Developmental trajectories of childhood anxiety: Identifying

continuity and change in anxious emotion. *Developmental Review*, *28*(4), 488-502.

Https://doi.org/10.1016/j.dr.2008.01.001

Wichstrøm, L., Belsky, J., & Berg-Nielsen, T. S. (2013). Preschool predictors of childhood anxiety disorders: A prospective community study. *Journal of child psychology and psychiatry*, *54*(12), 1327-1336. Https://doi.org/10.1111/jcpp.12116

Wichstrøm, L., Belsky, J., & Steinsbekk, S. (2017). Homotypic and heterotypic continuity of symptoms of psychiatric disorders from age 4 to 10 years: A dynamic panel model. *Journal of Child Psychology and Psychiatry, 58*(11), 1239-1247. Https://doi.org/10.1111/jcpp.12754

Wichstrøm, L., Berg-Nielsen, T. S., Angold, A., Egger, H. L., Solheim, E., & Sveen, T. H. (2012). Prevalence of psychiatric disorders in preschoolers. *Journal of Child Psychology and Psychiatry*, *53*(6), 695-705. Https://doi.org/10.1111/j.1469-7610.2011.02514.x

World Health Organization. *International Classification of Functioning, Disability and Health.* 2nd ed. Geneva, Switzerland: World Health Organization; 2001.

Zahl, T., Steinsbekk, S., & Wichstrøm, L. (2017). Physical activity, sedentary behavior, and symptoms of major depression in middle childhood. *Pediatrics*, *139*(2). Https://doi.org/10.1542/peds.2016-1711

Zahn-Waxler, C., Klimes–Dougan, B., & Slattery, M. J. (2000). Internalizing problems of childhood and adolescence: Prospects, pitfalls, and progress in understanding the development of anxiety and depression. *Development and psychopathology, 12*(3), 443-466. Https://doi.org/10.1017/S0954579400003102

Appendix

Table 1

Sample characteristics

Characteristics	%
Gender of the Child	
Male	49,1
Female	50,9
Gender of parent informant	
Male	15,2
Female	84,8
Ethnic origin of biological mother	
Norwegian	93,0
Western countries	5,8
Other countries	3,2
Childcare	
Official day center	95,0
Other	5,0
Biological parents' marital status	
Married	56,3
Cohabiting longer than six months	32,6
Separated	1,7
Divorced	6,8
Widowed	0,2
Cohabiting less than six months	1,1
Never lived together	1,3
Informants socioeconomical status	
Leader	5,7
Professional, higher level	25,7
Professional, lower level	39,0
Formally skilled worker	26,0
Farmer/fisherman	0,5

Unskilled worker	3,1
Parent's highest education	
Junior high school not complete	0
Junior high school (10th grade)	0,6
Some education after junior high school	6,1
Senior high school (13th grade)	17,3
Some education after senior high school	3,4
Some college or university education	7,6
Bachelor's degree	6,2
College degree (3-4 years of study)	33,6
Master's degree or similar	20,3
PhD completed or ongoing	4,4
Household's gross annual income	
0-225' NOK (0-40' USD)	3,3
225'-525' NOK (40'-94' USD)	18,4
525'-900' NOK (94'-161' USD)	51,6
900' + NOK (161' + USD)	26,7
At least one parent have received treatment for mental health problems	
None	73,8
Outpatient only	16,3
Hospitalized	10,0
Patient received medical treatment for mental health problems	
No	87,4
Yes	12,6