Multifamily Group Cognitive Behavioral Therapy for Child and Adolescent Anxiety Disorders

An investigation into the effectiveness and role of family accommodation and parental early life maltreatment

Thomas Bjerregaard Bertelsen

Thesis for the degree of Philosophiae Doctor (PhD)
University of Bergen, Norway
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UNIVERSITY OF BERGEN

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Scientific Environment

The study described in the current thesis was conducted at the Department of Child and Adolescent Mental Health (ABUP) outpatient clinic in Sørlandet Hospital: Kristiansand and Arendal. Professor Åshild Tellefsen Håland at the University of Agder and Sørlandet sykehus was my main supervisor. Associate Professor Gro Janne Henningsen Wergeland at the Haukeland hospital and Professor Joseph Himle of the University of Michigan were my co-supervisors. Associate professor Tine Nordgreen of the University of Bergen served as my co-supervisor until 2020 when she was replaced by Professor Bente Storm Mowatt Haugland of the University of Bergen due to circumstantial changes in the workplace. I enrolled into the doctorate program at the Graduate School of Clinical and Developmental Psychology at the University of Bergen for my PhD and gained employment at the Research and Development Unit of the Department of Child and Adolescent Mental Health at Sørlandet Hospital in Kirstiansand. The study was conducted as part of the PhD for a doctorate thesis and approved by the Regional Ethics Committee (reg. nr. 2017/1367), and the PhD was funded by Sørlandet Kompetansefond and Sørlandet Sykehus.

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Abstract

Anxiety disorders are prevalent among adolescents (ages 12–18 years), and they have a detrimental impact on individuals and society both in the short- and long-term. Unfortunately, many of those adolescents remain impaired after treatment in routine clinical care (i.e., Child and Adolescent Mental Health Services). Therefore, it is vital to improve treatment effectiveness for adolescents with anxiety in routine clinical care. The present thesis evaluated the effectiveness of a multifamily CBT intervention (*RISK*), intended to enhance outcomes for adolescents in routine clinical care.

Methods

This study was conducted as a single arm open-trial with outcomes benchmarked against existing studies regarding the effects of CBT for child and adolescent anxiety in routine clinical care settings. Ninety adolescents and their parent(s) were recruited from community care settings between 2017 and 2019, and diagnostic interviews and parent, adolescent, and clinician-rated assessments of adolescent anxiety were convened at pretreatment, posttreatment, 3-, 6-, and 12-month follow-ups. Additionally, research participants completed questionnaires after each session about the existence of anxiety symptoms and the quality of parental accommodation. Paper I assessed the effectiveness of the *RISK* treatment when compared with the results of a meta-analysis of CBT for child and adolescent routine clinical and community care. Paper II examined the directional relationship between family accommodation and adolescent anxiety during treatment. Paper III investigated the relationship between parental early life maltreatment (ELM) and adolescent anxiety and clinical impairment before treatment. It also sought to determine the effects parental ELM had on the treatment outcomes and whether parental depression acted as a potential mediator of treatment outcomes.

Results

Paper I found at posttreatment that the *RISK* treatment was comparably effective to benchmarks on measures of diagnostic status and adolescent-, parent-, and

clinician-rated adolescent anxiety symptoms and clinical impairment. Between posttreatment and 12-month follow-up greater improvements occurred and 79.5%, 95% Highest Posterior Density interval [74.7, 84.2] of adolescents no longer met diagnostic criteria for an anxiety disorder.

In Paper II, the relationship between family accommodation and adolescent anxiety was found to be bidirectional. The effect of previous sessions family accommodation on adolescent anxiety symptoms in the current session was β = 0.23, 95% CI [0.08, 0.38]. The effect of previous sessions adolescent anxiety symptoms on family accommodation in the current session was β = 0.11, 95% CI [0.06, 0.17]. These findings indicate that adolescent anxiety exerts a greater impact on family accommodation than family accommodation does on adolescent anxiety.

In Paper III, mother ELM was positively associated with mother- and adolescent-rated adolescent anxiety at pretreatment. Along the same line, father ELM was found to be positively associated with adolescent anxiety symptoms at pretreatment. As anticipated, the outcomes of treatment for adolescent-rated anxiety symptoms were negatively impacted by mother ELM. Mothers depressive symptoms mediated the relationship between mother- and adolescent-rated adolescent anxiety symptoms and mother ELM. Fathers depressive symptoms mediated the relationship between father-rated adolescent anxiety symptoms and father ELM.

Conclusion

The findings of the present thesis indicate that multifamily CBT is effective for treating adolescent anxiety disorders in routine clinical care. The findings on parental accommodation highlight the importance of involving parents in the management of adolescent anxiety disorders, but they also underscore that direct work with the adolescent (i.e., exposure practice) must be prioritized in routine clinical care. The findings also suggest that ELM and parental depression may be important factors to consider when treating adolescents with anxiety disorder in routine clinical care.

Future research should assess whether the effectiveness of multifamily CBT in the treatment of adolescent anxiety disorders can be maintained with less resources

Sammendrag

Angstlidelser er vanlig hos ungdom (12–18 år), og har skadelige effekter for individet og samfunnet både på kort og lang sikt. Dessverre er mange ungdommer fortsatt plaget av angst etter regulær poliklinisk behandling (i.e., BUP). Derfor er det behov for mer effektiv behandling for ungdom med angstlidelser gitt i spesialisthelsetjenesten. I denne avhandlingen evalueres en flerfamilie kognitiv atferdsterapi intervensjon (*RISK*), som hadde som formål å forbedre effekten av behandling for angst i spesialisthelsetjenesten. Foreldrefaktorer som kan forbedre eller hemme utfall av behandling blir også undersøkt.

Metoder

Studien ble utført som en observasjonsstudie med resultater "benchmarked" mot eksisterende studier på effekten av kognitiv atferdsterapi i regulær poliklinikk for barn og ungdommer med angst. Nitti ungdommer og deres foreldre ble rekruttert ved BUP mellom 2017 og 2019, og diagnostiske intervjuer og foreldre-, ungdoms- og klinikervurderte vurderinger av ungdomsangst ble samlet inn før, etter, og ved 12 måneders oppfølging. I tillegg ble det fylt ut spørreskjemaer etter hver terapi-session om grad av angstsymptomer og grad av uhensiktmessig foreldretilpasning. Artikkel I vurderte effektiviteten av *RISK* behandlingen sammenlignet med resultater fra en metaanalyse av kognitiv atferdsterapi regulær poliklinisk behandling for barn og ungdom. Artikkel II vurderte hvordan foreldres uhensiktsmessige tilpasning og ungdommens angst påvirket hverandre fra uke til uke under behandlingen. Artikkel III vurderte sammenhengen mellom foreldrenes egen erfaring med mishandling i barndommen (Early Life Maltreatment; ELM) og ungdommens symptomtrykk før behandling. Artikkel III vurderte også om foreldres depresjon og egen erfaring med mishandling i barndommen påvirket ungdommens utbytte av *RISK* behandlingen.

Resultat

I artikkel I ble det funnet at *RISK* var sammenlignbar med benchmark ret etter behandling i forhold til diagnostisk status og ungdoms-, foreldre- og klinikervurderte ungdomsangstsymptomer og klinisk funksjonsnivå. Etter et år var resultatene bedre enn forventet ut ifra benchmark og 79,5 %, 95 % HPD [74,7, 84,2] av ungdommene oppfylte ikke lenger diagnostiske kriterier for en angstlidelse.

I artikkel II ble forholdet mellom det funnet et gjensidig forhold mellom foreldres uhensiktsmessig tilpasning og ungdommenes angst. Uhensiktsmessig tilpasning i forrige terapi-session økte ungdommens angstsymptomer i den nåværende, $\beta = 0,23$, 95 % KI [0,08, 0,38]. Samtidig påvirket ungdommens angstsymptomer i forrige terapi-session foreldrenes tilpasning i den nåværende, $\beta = 0,11$, 95 % KI [0,06, 0,17]. Dette indikere at ungdommers angstsymptomer har større innflytelse på foreldres tilpasning enn foreldres tilpasning har på ungdommens angst.

I papir III var mors ELM positivt assosiert med mor- og ungdoms-vurdert ungdomsangst før behandling. Fars ELM var positivt assosiert med ungdoms angstsymptomer før behandling. Hvis mor hadde opplevd ELM påvirket dette negativt behandlingens effekt på ungdommens angstsymptomer. Mødres depressive symptomer medierte forholdet mellom ungdommens angstsymptomer og mors ELM. Fedres depressive symptomer medierte forholdet mellom far-vurderte ungdomsangstsymptomer og far ELM.

Konklusjon

Funnene i denne avhandlingen indikerer at *RISK* er effektiv og gjennomførbar for ungdomsangstlidelser i regulær poliklinisk behandling. Funnene som omhandler uhensiktsmessig foreldretilpasning fremhever viktigheten av å involvere foreldre, men understreker at direkte arbeid med ungdommen (dvs. eksponeringterapi) må prioriteres). Funnene tyder også på at ELM og foreldredepresjon kan være viktige faktorer å vurdere når man behandler ungdom med angstlidelse i regulær poliklinik. Fremtidig forskning bør vurdere om effektiviteten kan opprettholdes med mindre ressurser.

List of papers

Paper I - *Bertelsen, T. B., Wergeland, G. J., Nordgreen, T., Himle, J. A., & Håland, Å. T. (2022). Benchmarked effectiveness of family and school involvement in group exposure therapy for adolescent anxiety disorder. Psychiatry Research, 114632. https://doi.org/10.1016/j.psychres.2022.114632*

Paper II - *Bertelsen, T. B., Himle, J. A., & Håland, Å. T. (2022). Bidirectional Relationship Between Family Accommodation and Youth Anxiety During Cognitive-Behavioral Treatment. Child Psychiatry and Human Development. https://doi.org/10.1007/s10578-021-01304-5*

Paper III - *Bertelsen, T. B., Wergeland, G. J., Haugland, B. S. M., Håland, Å. T. (2022) Parental Early Life Maltreatment and Depression in Treatment of Youth Anxiety Disorder: Mediation and Moderation.* [In review]

Abbreviations

ADIS - Anxiety Disorder Interview Schedule

BAIN - Bayesian analysis of informative hypotheses

BF - Bayes Factor

CBT - Cognitive behavioral therapy

CGI-S - Clinical Global Impression - Severity Scale

CSR - Clinical Severity Rating

ELM - Early life maltreatment

FASA - Family Accommodation Scale Anxiety

HPD - Highest Posterior Density interval

ICC - Intraclass coefficient

OCD - Obsessive–Compulsive Disorder

PHQ-9 - Patient Health Questionnaire-9

RCT - Randomized Controlled Trial

SAD - Social Anxiety Disorder

SCAS - Spence Children's Anxiety Scale

STIC - Systemic Therapy Inventory of Change

Contents

1. Introduction

1.1 Overview of the Thesis

The present thesis evaluates the effectiveness of cognitive behavioral therapy (CBT) that was delivered in multifamily groups, requiring referral by healthcare practitioners, during routine clinical care for adolescents with different anxiety disorders. The abovementioned multifamily CBT, named *RISK* as in "take a risk," was developed at Sørlandet Hospital by Åshild Håland (main supervisor) and formed a part of the routine clinical care plan for adolescents with anxiety prior to the beginning of the current research project. The data regarding participants in the *RISK* treatment plan that was used in the present thesis was collected between 2017 and 2020. The treatment was administered by clinicians with minimal alterations to routine clinical care and the *RISK* treatment is still currently delivered in a similar fashion. The current thesis aims to examine whether the administration of *RISK* in routine clinical care is effective and how parental factors may affect the treatment outcomes of adolescents with anxiety disorders. First, the effectiveness of the *RISK* treatment was assessed with regards to achieving loss of anxiety diagnoses at posttreatment and by the 1-year follow-up (Paper I). Second, the relationship between family accommodation and adolescent anxiety was assessed to determine if and how these affect each other (Paper II). Third, the effect of parental mental health and parental childhood experiences of maltreatment on adolescent anxiety was assessed (Paper III).

The research in this thesis focuses on evidence-based treatments and their use in routine clinical care. The importance of development during adolescence in relation to the potentially negative impact of anxiety disorders is the central aspect of this research. Further, the research also focuses on involvement of parents in treatment, and how behavior such as family accommodation and parental mental health may impact treatment. In the following sections and subsections, the broader literature on child *and* adolescent anxiety disorders and their treatment in routine clinical care is summarized. In addition, the relevant literature on adolescents in particular and abovementioned parental factors is reviewed. After the presentation of current

literature, the *RISK* treatment is presented with a description on how it relates to the current literature. Also considerations made to make the treatment feasible in routine clinical care are presented. Following this, there is a discussion of the findings and methodology in the papers as well as clinical implications and future directions.

1.2 Anxiety Disorders in Children and Adolescents

Anxiety disorders in children and adolescents are common, with a point prevalence rate of 4%–8% (Essau et al., 2018; Ghandour et al., 2019; Vizard et al., 2018). These disorders are associated with comorbid diagnoses and impairments in social functioning and school participation (O'Neil et al., 2012; Settipani & Kendall, 2013; Swan et al., 2018). Owing to a higher frequency of school absenteeism, parental productivity loss, and increased healthcare utilization, there is an expected 20 times increase in societal costs in children and adolescents with an anxiety disorder (Bodden, Dirksen, et al., 2008). If left untreated, impairments arising due to anxiety disorders persist into adulthood (Swan & Kendall, 2016). Furthermore, a quarter of adolescents with anxiety experience drug and alcohol abuse, depressive disorders, and suicide ideation when entering adulthood (Doering et al., 2019).

Anxiety disorders in children and adolescents are defined by the presence of excessive fear and anxiety as well as associated behavioral disturbances, resulting in significant distress and/or impairment in important areas of functioning (American Psychiatric Association, 2013; World Health Organization, 2019). In the present thesis, anxiety disorders include the following diagnostic subtypes: separation anxiety, specific phobia, panic disorder, agoraphobia, social phobia, generalized anxiety, and obsessive–compulsive disorder (OCD). OCD has been included as an anxiety disorder given its historical relationship as an anxiety disorder and similarities in treatment (American Psychiatric Association, 1994; World Health Organization, 2016).

A wide range of psychological approaches have been empirically tested and are used in routine clinical care for children and adolescents with anxiety disorders, which include, among others, psychodynamic therapy, play therapy, and eye movement desensitization and reprocessing (Bear et al., 2020; Higa-McMillan et al., 2016). Although these and numerous other therapeutic interventions lack empirical support, a substantial body of research supports the use of CBT and exposure practice for the treatment of child and adolescent anxiety (Crowe & McKay, 2017; Higa-McMillan et al., 2016). CBT has been tested in different settings and formats, and it has demonstrated efficacy in treating anxiety disorders in specialized research (i.e.,

efficacy studies) and effectiveness in routine clinical and community care settings (i.e., effectiveness studies) as indicated by several meta-analyses (James et al., 2015; Wergeland et al., 2021; Whiteside et al., 2020).

Despite the size and scope of CBT's empirical support, room for further improvement still exists. Following the complete administration of CBT, anxiety disorders do not remit in numerous children and adolescents and they continue to experience symptoms of anxiety and significant impairments in their ability to function in daily life. During CBT, 6.1%–10.1% of participants voluntarily drop out of the treatment plan and 39.7%–49.4% are not in remission after treatment (Sigurvinsdóttir et al., 2020; Wergeland et al., 2021). At 12-months follow-up it is expected that 50% of children and adolescents, with anxiety disorders who had received CBT are not in remission (Rith-Najarian et al., 2019).

1.2.1 Routine Clinical Care for Children and Adolescents

Equally important to enhancing the magnitude of effects, it is important to ensure that effective treatments are implemented in routine clinical care. Despite the aforementioned large amount of empirical evidence in favor of CBT as an effective treatment for anxiety disorders, this treatment approach is still perceived as underutilized in routine clinical care (Bear et al., 2020; Villabø et al., 2018). The reason for the lack of CBT in routine clinical care may be understood in light of differences between routine clinical care settings and research settings. These differences may partially be understood by examining the difference between efficacy and effectiveness studies (Haynes, 1999). Efficacy studies test interventions under controlled circumstances, allowing for the isolation of study factors (Haynes, 1999). In contrary, effectiveness studies test therapeutic interventions in circumstances similar to routine clinical care settings (Haynes, 1999). Hence, clinicians might be skeptical of evidence from efficacy studies if the study settings differ from their own day-to-day experiences.

Important differences between routine clinical care and efficacy include differences in the training and supervision of clinicians, caseload, and available resources. Efficacy studies may recruit highly specialized clinicians, or provide

participating clinicians extensive training on how to conduct therapy within the parameters of the study design. In routine clinical care settings, therapists often are limited to their knowledge base; thus, they learn from experience with minimal supervision (Nelson et al., 2006). Efficacy studies tend to focus on one specific diagnosis and exclude participants with several comorbidities. Clinicians who work in routine clinical care settings often deal with cases wherein comorbidities are common. Discrepancies in resources available to clinicians may prevent the implementation of the most effective aspects of treatment in routine clinical care settings, such as exposure therapy, due to time constraints (Pittig et al., 2019).

With regard to the effectiveness of CBT in child and adolescent anxiety treatment outcomes, a meta-analysis was conducted by Wergeland et al. (2021), which included 29 studies performed in routine clinical care or school healthcare settings. The participants of the studies primarily included children (mean age = 9.9 years, SD = 1.7), and only the participants of two studies had a mean age above 12 years (Bodden, Bögels, et al., 2008; Van Steensel & Bögels, 2015). The abovementioned 29 studies implemented therapeutic interventions with moderate-to-high degrees of family involvement and a total session duration of 4–20 hours (M = 12.6, SD = 4.6). The findings of the meta-analysis revealed that half of all the children and adolescents were still impaired by their anxiety disorders (i.e., they did not achieve complete remission) posttreatment. At the 1-year follow-up, one-third of the children and adolescents still experienced impairments due to their anxiety disorders. The meta-analysis suggested that CBT was equally effective in both efficacy and effectiveness research settings in the treatment of child and adolescent anxiety disorders (Wergeland et al., 2021), which further highlighted the need to make such effective treatments available in routine clinical care.

1.3 Adolescence and Anxiety Disorders

Adolescence (12–18 years of age) is an important developmental period characterized by enhanced learning, increased importance of peer relationships, decreased time spent with parents, and a higher frequency of disagreements with parents (Dahl et al.,

2018; Pfeifer et al., 2013; Smetana & Rote, 2019). Despite the somewhat turbulent parent–child relationship that can occur at this stage, parents play a vital role in promoting the development of autonomy of adolescents and their mental well-being (Smetana & Rote, 2019). However, this developmental period also comprises several risks, such as a higher risk of dropping out of school and the occurrence of chronic psychiatric disorders (Dahl et al., 2018; Moretti & Peled, 2004). Specifically, anxiety disorders become more prevalent during the transition from childhood to adolescence, leading to increased rates of social phobia, panic disorder, and agoraphobia among this age group (Costello et al., 2011; Waite et al., 2014).

A recent systematic review and meta-analysis has highlighted the importance of research on adolescents with anxiety disorders, indicating a low therapeutic effect of CBT (Baker et al., 2021). This review further described the outcomes of 15 studies regarding CBT conducted for the treatment of adolescents with anxiety disorders. The majority of these studies (n = 11) were performed in efficacy settings (i.e., specialized research settings), and lasted 4–24 hours with parents included in 7 of these studies. The review reported no remission among two-thirds of the adolescents. Based on these findings, the meta-analysis suggested an urgent need for treatments developed specifically for adolescents with anxiety disorders (Baker et al., 2021). Such treatments should fit into the adolescents' daily life activities and focus on more severe symptoms and degree of social anxiety prevalence, which are characteristic of adolescents with anxiety disorders (Baker et al., 2021).

Given the personal and societal consequences of adolescent anxiety, it is essential to develop effective treatments that are readily available. Treatments that are available for adolescents in routine clinical care often comprise an eclectic mix of evidence-based and non-evidence–based interventions (e.g., CBT, pharmacotherapy, psychoanalytic therapy) (Bear et al., 2020). A great concern is that many adolescents who seek help within routine clinical care settings receive treatments that are lengthy (34.6 hours over 29.4 weeks), and the majority (66%) remain impaired (i.e., do not achieve remission from anxiety disorders) even after the completion of the treatment (Bear et al., 2020). Thus, there is a great need for developing interventions with increased therapeutic effectiveness for adolescent anxiety in routine clinical care.

1.3.1 Adolescents with Anxiety in Routine Clinical Care

Table 1 contains an overview of the effectiveness of CBT for the treatment of adolescent anxiety disorders. This table presents the findings of 26 studies that include *any* adolescent (i.e., any participant aged ≥12 years) with anxiety disorders or OCD who were treated in routine clinical care settings (i.e., referred care and not school-based care) with CBT. Many of these studies (n = 12) primarily included children (<12 years of age), with a mean age of 9.4–11.7 years. The remaining 14 studies primarily included adolescents, 11 of which included both children and adolescents participating in the research. Of the 26 studies that were analyzed, 11 selectively focused on specific diagnoses (i.e., OCD or social phobia). The remaining comprised participants with any anxiety diagnosis. Regarding the evaluation of whether the participants achieved full remission, the rate of effectiveness ranged from 21%–61% at the posttreatment period and 33%–74% at follow-up (Barrington et al., 2005; Wergeland et al., 2014). However, the treatment format of the studies was highly variable, with parental involvement and treatment hours ranging from 0% to 100% and 10 to 19.5 hours, respectively (see Table 1).

Despite a substantial body of work, few studies regarding routine clinical care have specifically examined adolescents. Of the 26 studies, only 3 have examined adolescents (i.e., only included age 12–18) who were treated for anxiety disorders in routine clinical care settings (Baer & Garland, 2005; Reynolds et al., 2013; Waite et al., 2019). The findings from these three studies have been evaluated in greater detail in the following paragraphs.

Baer and Garland (2005) investigated a 12-week, group CBT intervention for treating social phobia in a small pilot study (n = 12). The total session duration of the treatment plan was 18 hours, and 58% of the participants in the study had comorbid anxiety disorders (Baer & Garland, 2005). Although the study did not provide data regarding the continued presence or complete remission of all anxiety diagnoses by the end of the treatment, Baer and Garland found that 36% of the participants no longer met the criteria to be diagnosed with their primary anxiety disorder (2005). Reynolds et al. (2013) investigated a 14-week, individual CBT treatment plan for

participants with OCD in a small randomized controlled trial (RCT) and compared the therapeutic effectiveness of CBT with and without parental involvement (n = 25 for both). The treatment session lasted 14 hours in both the types of interventions, and the participants had an average of 2.7 anxiety diagnoses (Reynolds et al., 2013). The study did not provide data regarding the scale of full remission of the anxiety diagnoses; however, it was found that 46% of the participants responded to the treatment based on the clinician-rated measures of OCD (Reynolds et al., 2013). Waite et al. (2019) investigated a 10-week, internet-delivered CBT for a range of anxiety disorders in a sample of 30 adolescents. The participants had an average of 1.9 anxiety disorders. In the posttreatment period, 27% of the participants were in remission from all their anxiety disorders and 40% were in remission from their primary anxiety disorder.

Overall, these findings emphasize the need for more studies on adolescents with anxiety who are being treated in routine clinical care. The literature included herein does not provide information regarding the effectiveness of face-to-face CBT for adolescents with a range of anxiety disorders (i.e., not focused on a single anxiety disorder). Thus, the collated findings may not be representative of the effectiveness of CBT delivered in routine clinical care. Notwithstanding their limited scope, the findings so far suggest that the therapeutic effects of CBT for adolescents with anxiety disorders may agree with those from efficacy settings wherein two-thirds of adolescents do not achieve remission following the administration of CBT (Baker et al., 2021).

Table 1. Studies including adolescents with anxiety disorders in routine clinical care

Study	Treatment	N	Age	PI	Hours	Exp	Inclusion Dx	SAD	Follow-up months	Remission		
										Type[a]	Posttreatment	Follow-up
Baer & Garland (2005)	CBT	12	13–18	8%	18	100%	SAD	100%		Primary	36%	
Barrington et al. (2005)	CBT	28	7–14		12		Mixed	21%	12	Full	61%	74%
Benazon et al. (2002)	CBT-ERP	16	8–17	33%		66%	OCD			Primary	43%	
Bodden et al. (2008)	CBT	64	8–17	23%	19.5	10%	Mixed	67%	3	Full	53%	56%
Bodden et al. (2008)†	Family CBT	64	8–17	77%	19.5	0%	Mixed	67%	3	Full	28%	47%
Crawford et al. (2013)	cCBT	17	7–13	17%	10	50%	Mixed	18%		Primary	87%	
de Haan et al. (1998)	CBT-ERP	12	9–17				OCD					
Deighton et al. (2016)	Eclectic CBT	181	11–18				Mixed					
Dekel et al. (2021)	Family CBT	25		100%	12	0%	OCD	8%				
Edbrooke-Childs et al. (2018)	Eclectic CBT	3843	8–18				Mixed			Primary	32%	
Farrell et al. (2010)	CBT-ERP	35	7–17	22%	18	33%	OCD	9%		Primary	63%	
Jonsson et al. (2015)	CBT	87	7–16	100%	20		Mixed	10%	3	Full	28%	43%
Nauta et al. (2001)	Family CBT	9	8–15	58%	12	75%	Mixed	66%	3	Full	11%	71%

Study	Treatment	N	Age	PI	Hours Exp	Inclusion Dx	SAD	Follow-up months	Remission		
									Type[a]	Posttreatment	Follow-up
Nauta et al. (2001)†	CBT	9	8–15	17%	12 75%	Mixed	66%	3	Full	44%	88%
Nauta et al. (2003)	CBT	29	7–18	17%	12 75%	Mixed	51%	3	Full	54%	68%
Nauta et al. (2003)†	Family CBT	30	7–18	58%	12 75%	Mixed	51%	3	Full	59%	69%
Reynolds et al. (2013)	CBT	25	12–17	0%	14 79%	OCD	60%	6	Primary	44%	56%
Reynolds et al. (2013)†	Family CBT	25	12–17	100%	14 79%	OCD	56%	6	Primary	48%	60%
Riise et al. (2016)	CBT-ERP	22	11–17	100%	18 55%	OCD	9%				
Riise et al. (2018)	CBT-ERP	41	11–18	100%	18 55%	OCD	9%	6	Primary	80%	73%
Selles et al. (2018)	CBT-ERP	85	8–18	100%	18 100%	OCD	16%		Primary	38%	
Southam-Gerow et al. (2010)	CBT	24	8–15		18 20%	Mixed	54%	12	Full	43%	61%
Storch et al. (2015)	cCBT	49	7–13	17%	12 42%	Mixed	40%		Primary	55%	
Torp et al. (2015)	CBT-ERP	269	7–17	53%	17.5 86%	OCD			Primary	49%	
Van Steensel & Bögels (2015)	CBT	95	7–17	50%	18 41%	Mixed	53%	12	Full	36%	73%

Study	Treatment	N	Age	PI	Hours	Exp	Inclusion Dx	SAD	Follow-up months	Remission		
										Type[a]	Posttreatment	Follow-up
Villabø et al. (2018)	Group CBT	55	7–13	14%	15	29%	Mixed		24	Full	56%	87%
Villabø et al. (2018)†	CBT	55	7–13	14%			Mixed		24	Full	38%	67%
Waite et al. (2019)	cCBT	30	13–18				Mixed	30%			27%	
Wergeland et al. (2014)	CBT	91	8–15	33%	10	0%	Mixed	47%	12	Full	25%	33%
Wergeland et al. (2014)†	Group CBT	88	8–15	33%	15	0%	Mixed	46%	12	Full	21%	41%
Williams et al. (2010)	CBT	11		0%	10	9%	OCD					

Note. The table presents studies that include adolescents (12–18 years old) and describe interventions targeting the treatment of anxiety disorders in routine clinical care (i.e., referred care and not school-based care) with CBT. The majority of these studies included a mix of anxiety disorders, such as separation anxiety disorder, social anxiety disorder, specific phobia, panic disorder, agoraphobia, generalized anxiety disorder, and obsessive–compulsive disorder. The empty rows reflect cases with unavailable information. The findings of the studies by Bodden et al. (2008), Nauta et al. (2001, 2003), Villabø et al. (2018), Reynolds et al. (2013), and Wergeland et al. (2014) have been entered in multiple rows since these studies compared the different types of CBT implemented in routine clinical care.

Abbreviations: CBT–ERP, Cognitive behavioral therapy with exposure and response prevention; cCBT, computerized CBT; Family CBT, CBT with heavy reliance on parents; Eclectic CBT, Studies were clinicians were given no instructions; uncertainty regarding the fidelity of treatment; PI, Parental Involvement, denotes the proportion of sessions where parents were present; Exp, Exposure, denotes the proportion of sessions were in-session exposure was performed; Inclusion Dx, Denotes the diagnoses that formed the inclusion criteria of the study; SAD, Social Anxiety Disorder, reflects proportion of sample with social anxiety disorder.

[a]Full remission denotes loss of all anxiety diagnoses; primary remission denotes loss of the primary diagnosis.

†Denotes that the study represents a different variant of CBT delivered as another treatment arm in the study mentioned directly above.

The lower response rate to treatment in adolescents compared with children can be understood by considering certain characteristics that are different during adolescence. In particular, adolescents often have more severe anxiety symptoms, difficulties associated with school absenteeism, and higher rates of social anxiety disorders (Waite & Creswell, 2014). In particular, social anxiety disorder is associated with diminished response to treatment (Hudson et al., 2015), both immediately following treatment and long after its completion (Kodal et al., 2018; Lundkvist-Houndoumadi & Thastum, 2017). Furthermore, the risk of relapse following treatment is greater for social anxiety disorder than other anxiety disorders (Ginsburg et al., 2018).

Given the typical characteristics of and lower positive response rate to treatment for anxiety disorders in adolescents compared with children, clinicians and researchers need to tailor therapeutic interventions specifically for adolescents with anxiety disorders (Baker et al., 2021; Waite & Creswell, 2014). In particular, such interventions should be designed to address more severe anxiety symptoms and higher rates of social anxiety (Baker et al., 2021; Waite & Creswell, 2014). When surveying adolescents regarding their preference of treatments, they expressed the desire for effective treatment that does not interfere with school participation and attendance, intensive treatment, and treatment inclusive of a variety of activities in addition to conversation (Persson et al., 2017).

1.3.2 Potential Enhancements in CBT for Anxiety

1.3.2.1 Increased Exposure and Level of Parental Involvement.

For targeting more severe symptoms associated with anxiety disorders and improving treatment effectiveness for adolescents, the primary component of the intervention should be exposure, especially since it has been consistently associated with improved treatment effectiveness (Wang et al., 2017; Whiteside et al., 2020). Exposure practice entails systematically confronting one's fears, and numerous experts support it due to the considerable body of empirical evidence that upholds it as an active ingredient in CBT for anxiety treatment (Peris et al., 2017; Stewart et al., 2016). An example of exposure practice is a person with social phobia attempting public speaking or someone with claustrophobia availing an elevator. As a component

of exposure practice, the subject will often be guided by a therapist to face their anxiety head on; for example, in terms of the abovementioned examples, looking people straight in the eyes while presenting or not having a phone with them inside the elevator.

Another important element that may improve the effectiveness of CBT for adolescent anxiety disorder treatment in routine clinical care is parental involvement. In particular, parents can ensure the attendance of adolescents and their adherence to treatment (Nock & Ferriter, 2005), thereby potentially increasing the effectiveness of treatment by reducing treatment dropout rates and enhancing treatment adherence (de Haan et al., 2013; Lee et al., 2019). In addition, parental involvement in the treatment process may enhance trust and communication between parents and adolescents, which are well-known protective factors against anxiety in adolescents (Ebbert et al., 2019). Furthermore, parents may act as a bridge between the therapist's office and everyday life for adolescents by facilitating exposure and contingency management at home and in public (Barmish & Kendall, 2005). This process is considered the "transfer of control" from the clinician to the parents (Silverman et al., 1999).

However, parental involvement is generally not associated with improved outcomes of CBT (James et al., 2020; Reynolds et al., 2012). This may be explained by the heterogeneous nature of parental involvement, which may range in scope from a short psychoeducation to a parent-only treatment (Breinholst et al., 2012; Thulin et al., 2014). However, several studies suggest that parental involvement promotes treatment effectiveness in the posttreatment period insofar as the treatment's goal focuses on increasing the overall amount of exposure practice (Kreuze et al., 2018; Manassis et al., 2014; Whiteside et al., 2020). A meta-analysis by Manassis et al. (2014) revealed that when there was a high degree of parental involvement that focused on contingency management and facilitating exposure practice, there was an added effect of parental involvement at long-term follow-up. Thus, parental involvement appears to be beneficial if it enhances exposure practice. An approach that combined increased exposure practice and parental involvement conducted with multifamily groups in effectiveness settings for children (aged 6–11 years) (Lau et al., 2010) was highly effective (65% remission at posttreatment) and included in-session

exposure practice in two-thirds of the treatment sessions, which is substantially more than the average of one of five sessions (Wergeland et al., 2021).

1.3.2.2 Increase Generalizability with School Personnel.

To enhance the generalizability of the treatment, avoid interference with adolescents' school participation, and address any difficulties in attending school, CBT for adolescent anxiety treatment could potentially benefit from the involvement of school personnel (e.g., teachers, school nurses). It has been suggested that the involvement of school personnel aids in facilitating exposure practice even outside of clinical settings (Bouchard et al., 2004). Several reasons support the decision of including school personnel in CBT. First, the school environment offers a time-intensive and immersive training arena for children and adolescents with anxiety (Beidas et al., 2012). Second, children and adolescents often report that the school setting exacerbates their symptoms of anxiety (Beidas et al., 2012). Lastly, involving school personnel in CBT for adolescent anxiety treatment offers potential avenues to adolescents for exposure practice in the school environment (Werner-Seidler et al., 2017), further enhancing the generalizability of CBT-related learning.

To the best of our knowledge, few or no studies have investigated the effect of involving school personnel in clinician-delivered CBT for adolescent (or child) anxiety treatment in routine clinical care. However, a wealth of research regarding CBT delivered in a school setting by clinicians and school personnel exists (Haugland et al., 2020; Werner-Seidler et al., 2021). In relation to CBT administered by school personnel (i.e., not counselors, researchers, clinicians), it has been found that such treatment is effective in reducing the symptoms of child and adolescent anxiety (Werner-Seidler et al., 2021). Although the effect sizes of the abovementioned study were small (Hedges $g = 0.16$), the results are encouraging for further research, especially provided the preventative nature of the treatment and the fact that many of the participating children and adolescents may not yet have an anxiety disorder (Werner-Seidler et al., 2021). Additionally, studies have reported that CBT administered by school personnel can be equally effective as that by trained clinicians (Fjermestad et al., 2020; Ginsburg et al., 2012; Masia Warner et al., 2016), thereby

suggesting that school personnel are capable of addressing adolescent anxiety and could be an important aid in its treatment.

Despite the importance of treating adolescent anxiety, the scope and body of knowledge in the current literature have several limitations. First, adolescents are an under-researched group (Kendall & Ollendick, 2004; Waite & Creswell, 2014). In particular, there is a dearth of research regarding the effectiveness of CBT for adolescent anxiety treatment in routine clinical care (Baker et al., 2021; Wergeland et al., 2021). Among the three studies identified regarding the same, only one study included adolescents with several anxiety disorders and reported full remission (Waite et al., 2019). In addition, these studies had small sample sizes, and only one included follow-up assessments (Reynolds et al., 2013). Despite the potential benefits of involving school personnel as an adjunct to the treatment administered in clinical settings, to the best of our knowledge, no studies on children or adolescents exist that have investigated such an approach. Furthermore, only one of the 26 studies, which exclusively involved adolescents, included active parental involvement (Reynolds et al., 2013). The study by Baer and Garland (2005) only included parental involvement in one session and the study by Waite et al. (2019) did not plan to involve parents altogether. Furthermore, the latter study did not assess the extent of parent participation. Thus, there is a need for more knowledge regarding the potential of parental involvement in enhancing the effectiveness of treatment of adolescents with anxiety disorders in routine clinical care.

1.4 Parental Factors That Affect Treatment Outcomes

1.4.1 Parental Overcontrol and Family Accommodation

In addition to understanding how parents can enhance treatment for adolescent anxiety, it is also important to anticipate how they may impede treatment outcomes. Generally, research on the relationship between parental factors and childhood anxiety has investigated either the role of parental rearing behavior (i.e., overprotective and/or controlling parenting styles) or parents' mental health factors (i.e., parental depression and/or own anxiety) (Waite et al., 2014). Parental overcontrol is characterized by over

involvement and little autonomy granted to the child. The child is encouraged to be dependent on the parent and discouraged from developing autonomy (Waite et al., 2014). Often parents cite harm avoidance as the reason to overcontrol their children. However, parental overcontrol may instill fear of the world in the child, and their children may miss out on mastery-gaining experiences. As a result, parental overcontrol may inadvertently inhibit the development of self-efficacy, which increases the sense of threat (Wood et al., 2006). Several meta-analyses suggest an association between parental overcontrol and childhood anxiety (McLeod et al., 2007; van der Bruggen et al., 2008). Among adolescents, it has been found that mothers of adolescents with anxiety disorders are more controlling than mothers of non-anxious adolescents (Waite et al., 2014). It has also been found that perceived paternal overcontrol is associated with adolescent anxiety disorders (Niditch & Varela, 2012; Verhoeven et al., 2012).

The association of a particular type of parental controlling behavior, namely family accommodation, with OCD has been historically investigated, and its potential relationship with other anxiety disorders has recently attracted attention. Family accommodation is defined as any change that parents make in their behavior with the intent of lessening or protecting their child from anxiety or fear in the short term (Kagan et al., 2017; Zavrou et al., 2019). Family accommodation specifically refers to controlling behaviors aimed at reducing fear in children regardless of whether the perceived threat is real or not. Family accommodation may also include parents preemptively detaining children from potentially anxiety provoking situations, causing such children to experience fewer novel events, thereby reducing their opportunities of developing the skills of self-efficacy and a sense of mastery (Wood et al., 2003; Wood et al., 2006).

In line with the theoretical model of how family accommodation affects child anxiety, several studies have established that family accommodation is associated with child and adolescent anxiety (Jones et al., 2015; Kagan et al., 2016). Furthermore, it has been reported that family accommodation negatively affects child functionality due to the debilitating effects of anxiety disorders (de Barros et al., 2020; La Buissonnière-Ariza et al., 2018). Additionally, lower levels of family accommodation

have been correlated with the alleviation of anxiety symptoms (Schleider et al., 2018). These findings have led to increased interests in family accommodation as a potential method for the treatment of anxiety disorders in addition to that for OCD (Kendall et al., 2020; Norris & Kendall, 2020). Furthermore, treatments have been developed to reduce family accommodation, which have been reported to be effective in alleviating the symptoms of child anxiety (Lebowitz, Marin, Martino, et al., 2020; Zavrou et al., 2019).

Despite positive preliminary evidence, the current literature regarding anxiety disorders other than OCD is limited in the understanding of the directional relationship between child anxiety and family accommodation. Previous studies have postulated that family accommodation unidirectionally (parent to child) affects child anxiety without substantial empirical evidence. Another plausible explanation for the relationship between family accommodation and child anxiety is that decreased levels of anxiety reduce the extent of family accommodation (Kagan et al., 2016; Schleider et al., 2018). For example, parents may not feel inclined to drive their child to school if they knew that their child is not anxious about traveling by bus. An alternative explanation for the association between child anxiety and family accommodation is the existence of a bidirectional process between the two factors, wherein child anxiety and parental behavior affect one another reciprocally (Silverman et al., 2009; Van Zalk & Kerr, 2011). Understanding the directional relationship between adolescent anxiety and family accommodation is important for determining the manner of parental involvement for optimum treatment and exposure practice.

1.4.2 Parental Depression and Parent–Child Rejection

It is important to understand how parents can facilitate treatment and exposure practice for the management of child and adolescent anxiety disorders. However, all parents may not be able to provide aid in such circumstances, particularly in situations where parents may not be able to adhere to the treatment plan due to personal difficulties (Lundkvist-Houndoumadi & Thastum, 2017). Specifically, the state of the parents' mental health may cause rejecting behavior toward adolescents, thereby negatively affecting adolescent anxiety (Waite et al., 2014).

Parental rejection is characterized by hostile behavior, lack of warmth, and absence of emotional support toward the adolescent (Waite et al., 2014). Parental rejection creates an environment of emotional dysregulation, which increases the propensity of adolescents toward anxiety (McLeod et al., 2007). This is supported by several meta-analyses that provide evidence of a relationship between parental rejection and child anxiety (McLeod et al., 2007; van der Bruggen et al., 2008). Specifically for adolescents, higher levels of parental rejection and the lack of warmth from parents have been positively associated with more severe anxiety symptoms (Niditch & Varela, 2012; Verhoeven et al., 2012; Vazsonyi & Belliston, 2006). Additionally, experimental studies have reported that mothers with anxiety disorders have a more negative interaction with their adolescent children than mothers without anxiety disorders (Hudson & Rapee, 2001).

Parental depression forms a central aspect of promoting the creation of an insecure environment for adolescents, which is further fueled by parental rejection (Langrock et al., 2002). In particular, parental depression is believed to negatively impact child anxiety due to withdrawn or inconsistent parenting behavior (Hirshfeld-Becker et al., 2012; Reeb et al., 2015). Furthermore, a recent meta-analysis found parental depression to be a predictor of worse outcomes of CBT for anxiety in children and adolescents (Kunas et al., 2021). Thus, investigating how parental depression may co-occur with adolescent anxiety may improve their treatment outcomes.

1.4.3 Parental Early Life Maltreatment (ELM)

A potentially important target for understanding parental depression and its association with adolescent anxiety is parental ELM, which is defined as the negative experiences of parents in their childhood and adolescence (≤18 years in age), which may include sexual, physical, or emotional abuse (Witt et al., 2017). ELM has been associated with an increased risk of developing physical and psychiatric symptoms and disorders in adulthood (Afifi et al., 2011; Goodwin & Stein, 2004; Hovens et al.,

2010). Specifically, ELM is a significant risk factor for depression in adults (Koverola et al., 2005; Miranda et al., 2013; Springer et al., 2007).

Parental ELM has been associated with authoritarian, permissive, and aggressive parenting behaviors (Leslie & Cook, 2015; Newcomb & Locke, 2001). Further research on ELM and its effects on children has revealed that parental ELM is associated with the prevalence of anxiety symptoms among children, although the association is mediated by the extent of depressive symptoms in parents (Koverola et al., 2005; Morrel et al., 2003). Furthermore, a recent meta-analysis supported the connection between parental ELM, parental depression, and anxiety among children and adolescents (Plant et al., 2018). Notably, this meta-analysis suggested that parental ELM burdens children's and adolescents' mental health due to difficulties with attachment and poor parenting practices (Plant et al., 2018).

Although there is evidence of a relationship among parental ELM, parental depression, and children's anxiety, there remain several important limitations in the current literature regarding this relationship. Primarily, there is a lack of studies that have focused on the association of parental ELM with children and/or adolescents who have anxiety disorders in routine clinical care. Moreover, the few studies that have investigated this association included both children and adolescents, and the research design only required them to complete assessments at pretreatment (Miranda et al., 2011, 2013; Zalewski et al., 2013). Hence, to the best of my knowledge, no studies have investigated the effect of parental ELM on the treatment outcomes of adolescents with anxiety disorders or the relationship among parental ELM, parental depression, and adolescent anxiety disorders in routine clinical care.

Another important limitation elucidated in the research literature is the lack of findings regarding the potential association of father ELM with children or adolescents having anxiety disorders. There is a paucity of studies that investigate how father ELM impacts the mental health of children or adolescents, and there has been a call to focus on this area of research among relevant academic communities (Plant et al., 2018). The few studies that have investigated the impact of fathers' trauma-history on the mental health of their children have not focused on its potential impact on child and adolescent anxiety, and the research design also has certain

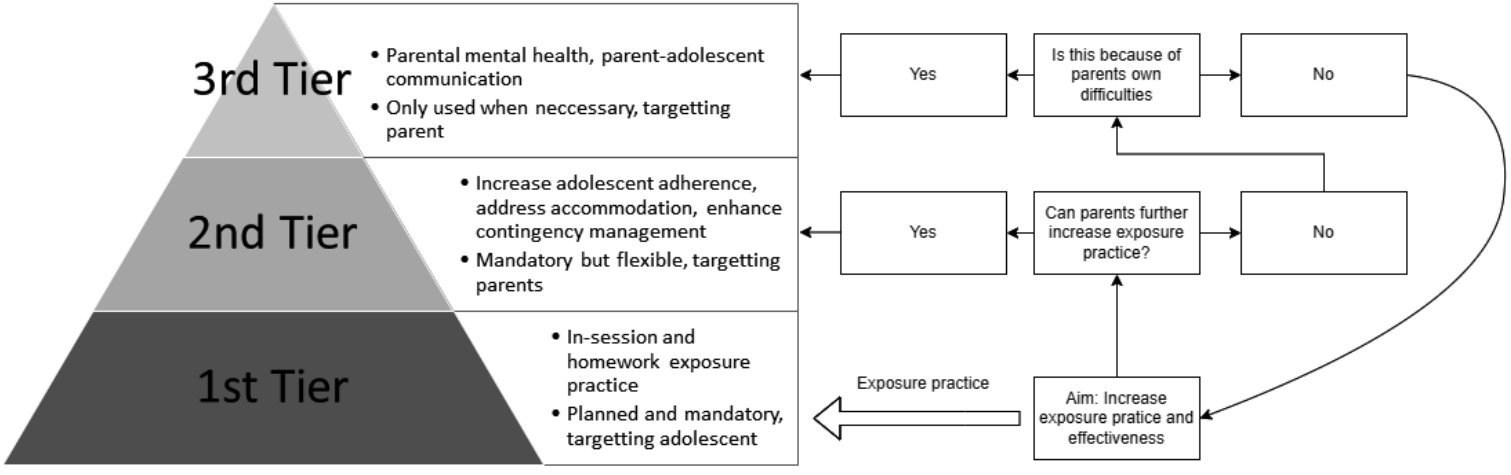
methodological limitations. For example, two studies used very specific traumatic events, such as 9/11 and/or the holocaust (Yehuda et al., 2008; Yehuda et al., 2001). In a similar vein, the findings of a study by Arditti and Strat (2020) were limited by the use of a single question rated by parents for assessing the mental health of their children. A deeper understanding of father ELM may be important since the behaviors of mothers and fathers have a different influence on child and adolescent anxiety (Bögels & Phares, 2008; Connell & Goodman, 2002; Liber, van Widenfelt, et al., 2008). Contrary to general expectations, it has been revealed that the rejection behavior of fathers has a greater influence than mothers on adolescents anxiety (Verhoeven et al., 2012). Thus, fathers may play a unique role for adolescent anxiety.

1.5 *RISK* Treatment

1.5.1 Guiding Principles of the RISK Treatment

The *RISK* treatment was developed by Åshild Håland (main supervisor of the current thesis) at Sørlandet Hospital (Håland et al., 2022). The treatment structure is inspired by modular CBT approaches (Becker et al., 2012; Chiu et al., 2013), and it has a predetermined structure, which allows flexibility and clinician judgment regarding the prioritization of different therapeutic interventions. The guiding principles of the *RISK* treatment include three tiers that describe the points therapists should focus on during sessions. The primary tier involves essential in-session and homework exposure practice. The secondary tier entails parental and school involvement, focusing on increasing adherence to treatment by reducing family accommodation, using contingency management, and psychoeducation. The interventions in the secondary tier have flexibility in terms of altering or shortening the length of the intervention to allow for more exposure practice with the adolescent. The tertiary tier comprises interventions that are voluntary, flexible, and implemented based on necessity. Its interventions focus on parent mental health, communication with their child, and maladaptive family dynamics. Figure 1 visualizes the *RISK* treatment rationale.

Fig. 1 Visualization of the *RISK treatment* rationale



Note. The pyramid on the left shows how different types of interventions are prioritized in *RISK*. The flowchart on the right depicts the thought process *RISK* clinicians should continuously have. Although sessions are planned around certain activities they should always be aiming to increase exposure practice, and thinking about whether and how to involve parents.

1.5.2 Structure of the RISK Treatment

The *RISK* treatment delivers therapy in groups of 5–8 families over 10 weeks, with a total treatment time of 38 hours over 12 sessions (including 3 hours of school involvement). School personnel involvement is incorporated in primarily sessions 1 and 12 without the presence of the adolescents undergoing treatment. These sessions involved psychoeducation and planning the manner of collaboration of school personnel in the treatment administered by clinicians. Sessions 2–4, 7–9, and 11 were held separately for parents and adolescents. Away from parents, participants worked with therapists and other group members to organize and execute exposure practice via a peer-to-peer support environment. To further enhance generalizability of learning and support systems, adolescents were asked to invite "special guests" (e.g., friends, grandparents, and neighbors) for session 7. Sessions 5, 6, 9, and 10 were dedicated for intensive exposure practice. During these sessions, adolescents spent 4 hours outside the clinic (e.g., at school, the shopping center, bus). During these sessions, adolescents worked with the parents of others and a group clinician. The aim of mixing families was so that the adolescents and parents could apply the strategies learned in the previous sessions without being influenced by the already established family dynamics. With this strategy, parents gained confidence in their ability to assist with exposure practice while maximizing adolescent exposure practice time.

In sessions without the adolescents, parents spent time with clinicians and other parents in a peer-to-peer support group. This parent-only time improved the parents' confidence in supporting their children and allowed for time to reflect on any ideas or sentiments that may inhibit their ability to facilitate their children's treatment. During the 10-week treatment program, school staff received 1–2 hours of telephone support from *RISK* therapists in addition to two 1.5-hour group sessions. The number and type of school personnel involvement varied depending on the needs of the adolescents. In some cases, school personnel managed the difficulties faced while organizing the daily school work around therapy that took place during school hours. In other cases, the school personnel were substantially more involved in planning, supporting, and

conducting exposure practices with the adolescents. Table 2 shows an overview of the structure of the *RISK* treatment.

Table 2. Description of the structure of the *RISK* treatment

	Hours spent			
Session	Together	Adolescent group	Parent group	Planned aim of session
1	0	0	0	Give psychoeducation for parents and school personnel and facilitate collaboration.
2	1.5	1	1	Give psychoeducation to parents and adolescents, perform exposure practice, and plan homework.
3	1.5	1	1	Conduct restructuring of negative thought patterns, perform exposure practice, and plan homework.
4	1.5	1	1	Give psychoeducation about behavioral experiments, conduct behavioral experiments and exposure practice, and plan homework.
5	4	1	1	Exposure practice with adolescents paired with a parent to other participating adolescents under clinician supervision.

6	4	1	1	Exposure practice with adolescents paired with a parent to other participating adolescents under clinician supervision.
7	1.5	1	1	Give psychoeducation to adolescents, parents, and “special guests” as well as conduct exposure practice and plan homework.
8	1.5	1	1	Conduct restructuring of negative thought patterns, perform exposure practice, and plan homework.
9	4	1	1	Exposure practice with adolescents paired with a parent to other participating adolescents under clinician supervision.
10	4	1	1	Exposure practice with adolescents paired with a parent to other participating adolescents under clinician supervision.
11	1.5	1	1	Conduct exposure practice and plan further practice after treatment completion.
12	0	0	1.5	Plan collaboration between parents and teachers to ensure adherence after treatment.

1.5.3 RISK Treatment in Routine Clinical Care

RISK treatment has been developed in a medium-sized routine clinical care setting in southern Norway. As such, the treatment method was designed for similarly sized settings. The structure of *RISK* involves an intensive transdiagnostic (i.e., targets more than one anxiety diagnosis) group format with four clinicians assigned to each individual group. As a result, sufficient resources are required for the effective implementation of *RISK*. In addition, it is important to consider the benefits of these structural elements in routine clinical care, given the importance of developing cost-effective interventions (Ollendick et al., 2018). Specifically, these structural elements aid in delivering evidence-based treatment and exposure practice, which are often under-utilized in routine clinical care (Bear et al., 2020; Pittig et al., 2019).

Comparisons of group and individual CBT have been investigated in two recent meta-analyses, both of which concluded that there was no significant difference between the two (Guo et al., 2021; James et al., 2020). However, the group format provides beneficial routine clinical care as it allows efficient use of time and clinician resources. This is because the group format allows qualified clinicians to simultaneously meet several adolescents (Liber, Van Widenfelt, et al., 2008). Additionally, the group format is a natural arena for *in vivo* exposure practice for social anxiety (Wersebe et al., 2013), which is important for adolescents.

Considering the transdiagnostic format, research has shown no difference in the outcomes between transdiagnostic and diagnosis-specific CBT for child and adolescent anxiety (Oldham-Cooper & Loades, 2017). However, current trends promote the use of diagnosis-specific treatments, particularly for social anxiety (Leigh & Clark, 2018; Spence & Rapee, 2016) and OCD (Freeman et al., 2018). In Norway, treatment methods have shifted toward disorder-specific treatments, following the success of the Bergen 4-day treatment manual (Havnen et al., 2014). This argument is strongly supported by

findings indicating that diagnoses, such as that of social anxiety disorder, benefit less from transdiagnostic CBT than other diagnoses. Specifically, research comparing transdiagnostic CBT with others have revealed 35% remission for social anxiety disorder versus 54% for other diagnoses (Evans et al., 2021). However, some of the most used transdiagnostic treatments, such as Friends (Barrett et al., 2000) and earlier versions of Coping cat (Kendall, 1994), have not placed a high degree of focus on in-session exposure practice. Thus, researchers may conflate the lack of outcomes from transdiagnostic treatments with the lack of focus on exposure practice. In this case, transdiagnostic treatment may offer several benefits compared with disorder-specific treatments. Transdiagnostic approaches can be used for a range of intragroup anxiety disorders and are crucial for maintaining appropriate treatment measures in routine clinical care settings that lack sufficient patient flow or other vital resources for the treatment of all specific anxiety-related disorders.

Transdiagnostic group formats also enable collaboration among more clinicians and pooling of clinician resources. Furthermore, bringing clinicians together in this way allows for *in vivo* supervision. Increasing the level of supervision is essential to compensate for the limited access of supervision that is often encountered by clinicians in routine clinical care (Nelson et al., 2006). Notably, the lack of supervision and inadequate time for each session explain why clinicians do not perform exposure practice in routine clinical care (Pittig et al., 2019). Thus, clinical supervision and the use of intensive treatment may increase exposure practice as well as the outcomes in such settings.

1.6 Aims of the Study

This research aimed to investigate the effectiveness of *RISK* treatment for adolescent anxiety in routine clinical care and understand how parental behavior (i.e., family accommodation) and parental mental health (i.e., ELM and depression) may enhance or inhibit the effectiveness of CBT for adolescent anxiety treatment.

1.6.1 Aim and Research Questions in Paper I

In Paper I, the aim was to assess the effectiveness of the *RISK* treatment compared with results from a meta-analysis of CBT for child and adolescent anxiety in routine clinical and community care. Comparisons were made against a meta-analysis that included adolescents *and* children treated in routine clinical care and school mental health settings (Wergeland et al., 2021). This meta-analysis was chosen to allow more comprehensive comparisons including follow-up remission status. The primary outcome was to assess the effectiveness of the treatment via the measures of diagnostic status (remission of all anxiety diagnoses) at posttreatment and 12-month follow-up. Secondary outcomes included determining treatment effectiveness in terms of the rate of primary diagnosis remission, clinically significant change, and measures of clinician-, parent-, and adolescent-rated anxiety symptoms at posttreatment and 12-month follow-up. Furthermore, exploratory analyses were conducted to examine whether treatment effectiveness was impacted by primary disorder, treatment received before pretreatment and additional treatment received between the posttreatment period and the 12-month follow-up. In addition, in this substudy, we also evaluated the feasibility of the treatment by assessing treatment non-completion, satisfaction of adolescents with the treatment, and involvement of school personnel.

1.6.2 Aim and Research Questions in Paper II

The primary objective of Paper II was to investigate whether the relationship between family accommodation and adolescent anxiety was bidirectional or unidirectional. This was assessed in each session. The association between family accommodation and anxiety symptoms was evaluated by comparing their mutual influence on each other as observed over the sessions. Further, we examined whether the influence of family accommodation was stronger on anxiety symptoms compared with the influence of anxiety symptoms on family accommodation.

1.6.3 Aim and Research Questions in Paper III

The primary aim of Paper III was to investigate the associations between the ELM and adolescent anxiety symptoms, clinical impairment at pretreatment, and treatment outcomes over the 12-month study period. Furthermore, we conducted a substudy where the mediating role of parental depression on the abovementioned treatment outcomes was examined, which were predicted by either the father or mother ELM.

2. Methods

2.1 Study Design

The study design was a single arm open trial, with treatment effectiveness benchmarked against the findings of a recent meta-analysis (Wergeland et al., 2021). Participants were recruited via rolling admission from 2017 to 2019. Individuals who met the criteria for the study were assessed via diagnostic interviews conducted at pretreatment and posttreatment, and 12 months following the completion of the treatment. Questionnaires were completed at pretreatment, posttreatment, and 3-, 6-, and 12-months posttreatment. In addition, at the conclusion of each therapy session, the participants completed process measures to assess their progress.

The study design facilitated data collection with minimal impact on daily clinical practice as clinical procedures, such as wait-list conditions or extra resources for control conditions or randomization were not required. This is essential because the clinics included in this study are a part of public health service and deliver free treatment to the population of the Agder region of southern Norway. *RISK* was delivered as the preferred treatment for several years before the study, and it was considered unethical to not offer what was believed to be the best available treatment. Thus, the design was beneficial in terms of pragmatics and ethical considerations. However, the lack of a control group may be considered a disadvantage from a methodological perspective, which will be discussed in depth later.

2.2 Procedure and Participants

2.2.1 Inclusion and Exclusion Criteria

The inclusion criteria included adolescents with a primary diagnosis of any anxiety disorder (i.e., separation anxiety, social anxiety, specific phobia, panic

disorder with or without agoraphobia, generalized anxiety, or OCD). Primary diagnosis was defined as the most severe diagnostic issue for which adolescents sought help. The exclusion criteria included adolescents who had received CBT within the previous 12 months, were receiving concurrent psychological treatment, and psychopharmacological treatment not stable for 6 months prior to study enrollment. Although not an exclusion criterion, the participants with development or psychotic disorders, current self-harm behavior or suicidal ideation, and extensive refusal toward attending school (defined as less than 50% attendance during the past month) were not eligible for receiving treatment because the procedures followed in the clinic dictate that such issues need to be treated before anxiety disorders.

2.2.2 Procedure

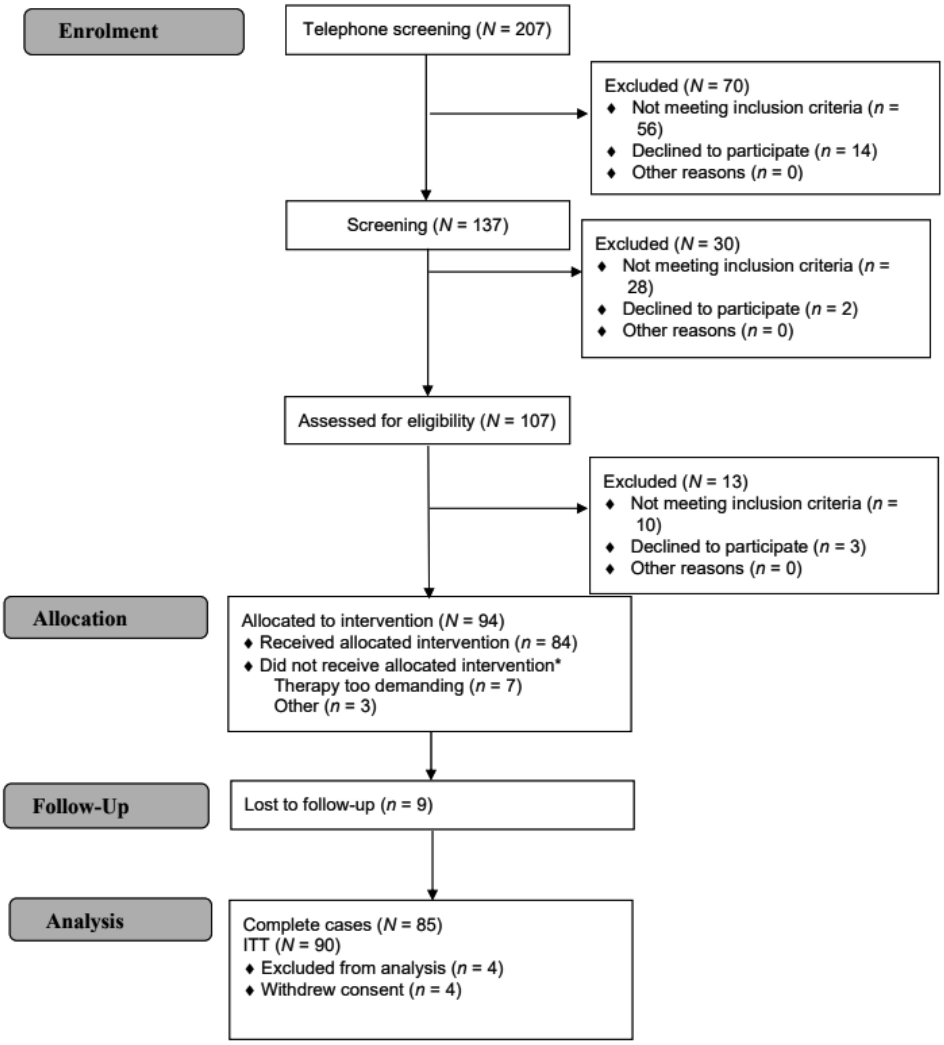
From 2017 to 2019, participants were recruited from two child and adolescent mental health community clinics in southern Norway. These clinics are public child and adolescent mental health clinics that require referral from a general practitioner and offer free treatment. Participants were recruited using a four-step process.

In the first step, potential participants were identified based on descriptions of a primary diagnosis of anxiety disorder in the referral letter. In this step, potential participants were also identified if they had already received treatment within the clinic, and their clinician suspected a primary diagnosis of anxiety disorder. During the study period, 207 potential participants were identified. In the second step of the recruitment procedure these 207 potential participants were contacted by phone by a study coordinator and screened for developmental and psychotic disorders, self-harm behavior, suicidal ideation, and extensive school absenteeism. During this phone call, potential participants learned about the research project and received a request to participate in it. This five to fifteen minute telephone screening was conducted to ensure that

procedures at the clinics were maintained. Out of the 207 adolescents contacted by phone, 56 were ineligible for treatment, and 14 elected not to participate in the treatment or research project. Next, face-to-face meetings where adolescents were screened against the inclusion criteria, informed further about the research project, and asked for consent were conducted with a *RISK* clinician. Twenty-eight adolescents did not meet inclusion criteria, and two did not wish to participate in the treatment or research project. The final step of the recruitment process required adolescents and mothers and/or fathers to meet with a participating clinician for a diagnostic interview that lasted 1–2 hours, using the Anxiety Disorder Interview Schedule IV (Silverman & Albano, 1996). During this interview participating adolescents and parents filled out pretreatment questionnaires (see measures 2.5). During this final step, 10 adolescents were found to have a primary diagnosis other than an anxiety disorder, and 3 adolescents decided not to participate any further in the research project.

After all screening and interview procedures, 94 adolescents were offered treatment following recruitment. Treatment completion was defined as >50% participation. This criterion ensured that adolescents had to attend at least one of the intensive exposure days during treatment. Consequently, 10 adolescents dropped out of the study. Reasons given for treatment discontinuation were: (a) finding therapy too demanding (n = 7), (b) personal disagreement involving other participant (n = 1), (c) finding the distance to the treatment facility too far (n = 1), (d) receiving an offer for individual therapy with private practitioners (n = 1). Following treatment, four participants withdrew consent and could thus no longer be included as participants in the analysis. Furthermore, five participants did not wish to respond to the 12-month follow-up; however, they permitted the use of their data for analysis. Thus, the final sample consisted of 90 adolescents with 85 complete cases. Figure 2, which is reprinted from Paper I, depicts recruitment and attrition

Fig. 2 Consolidated Standards of Reporting Trials (CONSORT) flow diagram



2.2.3 Participants

The analyzed sample consisted of 90 adolescents aged 12–18 (*M* = 15.3, *SD* = 1.3). Of these, 53.3% were recruited from referrals by a general practitioner or other related healthcare professional, and they had received no or minimal amounts of previous treatment prior to enrollment into this study (0–5 sessions). Other participants (27.8%) were identified by clinicians after initial treatment (6–10 sessions). The remaining participants (18.9%) had received a substantial amount of treatment (11–20+ sessions) before enrolling into the *RISK* treatment program. There were 39 (43.8%) two-parent homes, 32 (35.6%) parents with shared custody, and 19 (20.5%) single-parent households. The parents' average age was 45.0 years (*SD* = 6.1), with 58 fathers and 83 mothers in participating adolescents' families. 79 mothers and 50 fathers participated in treatment or as responders on questionnaires. In two-parent households, educational and occupational status was based on the parent with the highest education and occupational status. Most parents (*n* = 51, 57.4%) had at least a high school diploma, while 38 (41.9%) had a university diploma, and one (1.4%) had a middle school diploma. The parents either worked full time (*n* = 67, 74.0%), received government assistance (*n* = 17, 19.2%), or worked part-time (*n* = 4, 4.10%). All participants were ethnic Norwegians. Table 3, which is reprinted from Paper I, lists the sample's demographical information. This sample is used in substudy I and III; however, participants with a primary diagnosis of OCD were removed from the analyses of substudy II.

Table 3 Demographic and clinical characteristics of participants at baseline

Variable	%
Age	15.29 years (*SD* 1.32)
Female	76.50%
Living with	
Single parent	20.50%
Both parents	43.80%
Divorced, shared custody	35.60%
Primary anxiety disorder	
Social Phobia	52.40%
Separation anxiety disorder	4.80%
Generalized Anxiety Disorder	13.10%
Panic Anxiety and/or Agoraphobia	8.40%
Specific Anxiety Disorder	2.40%
Obsessive-Compulsive Disorder	19.00%
Comorbid Disorders	
Social Phobia	15.29%
Separation anxiety disorder	5.88%
Generalized Anxiety Disorder	9.41%
Panic Anxiety and/or Agoraphobia	18.82%
Specific Anxiety Disorder	9.41%
Obsessive-Compulsive Disorder	9.41%
Major Depressive Disorder	7.05%
ADHD	1.11%
Tourette's Syndrome	3.52%
Parents' highest education	
Primary school	1.70%
Trade school	28.70%
Secondary school	28.70%

Variable	%
College	41.90%
Parent occupational status	
Full time	74.00%
Part-time	4.10%
Subsidized	19.20%
Stay at home or under education	2.70%
Previous treatment[a]	
0 sessions	27.77%
0–5 sessions	25.55%
6–10 sessions	27.77%
11–20 sessions	13.33%
>20 sessions	5.58%

2.3 Treatment and Clinicians

The multifamily group CBT (*RISK*) for anxiety was developed by Åshild Håland at Sørlandet Hospital (Håland et al., 2022). The treatment was performed in groups of 5–8 families, which included 7 families, 10 parents, and 7 adolescents. During the trial, 14 groups received therapy. Over the next 10 weeks, 12 sessions totaling 38 hours of therapy were planned, including two 1.5-hour sessions attended by school personnel. The participants were offered the option of attending 2-hour booster sessions at 3, 6, and 12 months after therapy. The *RISK* treatment was delivered as outlined in 1.5 RISK Treatment.

The study's 20 clinicians worked at one of two routine clinical care clinics for child and adolescent mental health. The clinics treat a total of 76,000 children and adolescents aged 0–18 years in the rural and urban areas of southern Norway. Owing to changes in work conditions or absences, 8 of the original 12 study clinicians were replaced during the study, leaving 20 clinicians (70% female) who acted as *RISK* therapists. The clinicians were divided into groups of four. The mean clinical experience of the clinicians included in the study in child and adolescent mental health was 11.8 years (*SD* = 7.9 years, range = 2–30 years).

Workshops and supervision were conducted to train the clinicians for the implementation of the *RISK* treatment program. Eleven of the therapists already had formal CBT training prior to their participation in the study. Three 2-day workshops were conducted during the research project. These contained lectures on treatment approaches for different anxiety disorders as well as the mutual sharing of knowledge among clinicians based on their experiences with *RISK* treatment for anxiety disorders. Program developers acted as supervisors and either took part as clinicians in groups (i.e., *in vivo* supervision) or provided monthly supervision based on videotaped sessions. Education, supervision, and a treatment handbook helped ensure clinician adherence.

2.4 Ethical Considerations

Written informed consent was obtained from all the participants who comprised the entire sample, and the study was approved by the Regional Ethics Committee for research with human subjects (reg. nr. 2017/1367). Informed consent was provided to parents and adolescents who were above the age of 16 years. For adolescents younger than 16 years, informed assent was obtained. The study design was curated with the intention of avoiding some of the ethical difficulties that are associated with controlled trials. When allocating different treatments to participants, researchers might be uncertain which treatment is better. This concept is called "*equipoise."* In the absence of this concept, researchers might knowingly deliver subpar treatment to those in need, which contradicts the ethical requirement of doing no harm to participants (Fries & Krishnan, 2004). In the current study, it was reasonable to believe that *RISK* would outperform the alternative treatments present at the hospital, and hence, it was not deemed ethically feasible to include a control group. However, this does not imply that ethical RCTs are impossible in routine clinical care (Villabø et al., 2018; Wergeland et al., 2014), but rather that conditions at the Sørlandet Hospital could not maintain equipoise between *RISK* and an alternative treatment. To ensure valid analyses, Bayesian statistics were used and treatment effectiveness was tested against established benchmarks.

2.5 Measures

The study included multiple raters (independent raters, clinicians, adolescents, and parents) and used a variety of perspectives (self-rated, family member-rated, and outside family-rated) to assess multiple aspects of treating adolescents with anxiety disorders, such as diagnostic status, impairment, symptoms, and parental childhood experiences, at different times (before, during, and after treatment, as well as follow-ups). The inclusion of numerous

perspectives aids in obtaining a comprehensive view of mental health issues in children and adolescents (De Los Reyes et al., 2015; Navarro et al., 2020). In Paper I, the symptoms, clinical impairments, and diagnostic status of adolescents were assessed before and after the treatment and at a 12-month follow-up. In Paper II, adolescent anxiety and parental family accommodation were assessed during the treatment from session to session. In Paper III, adolescent anxiety symptoms, parent ELM, and depressive symptoms of parents were assessed before and after the treatment and at the 3-, 6-, and 12-month follow-ups. An overview of the abovementioned evaluations is present in Table 4.

Table 4. Overview of measurements in the three sub-studies

	Paper I			Paper II	Paper III		
	Pretreatment	Posttreatment	12-month Follow-up	During treatment	Pretreatment	Posttreatment	3-, 6-, 12-month Follow-up
Diagnostic interview							
ADIS	x	x	x		x	x	x
Questionnaires about adolescents							
CGI	x	x	x		x	x	x
SCAS	x	x	x	x	x	x	x
Questionnaires about parents							
FASA				x			
PHQ					x	x	x
STIC					x	x	x

Note. ADIS; Anxiety Disorder Interview Schedule. CGI; Clinical Global Impression. SCAS; Spence Child Anxiety Scale. FASA; Family Accommodation Scale Anxiety. PHQ; Patient Health Questionnaire. STIC; Systemic Therapy Inventory of Change.

2.5.1 Anxiety Diagnostic Interview Schedule - IV (ADIS)

Clinicians used ADIS-IV-C/P (Silverman & Albano, 1996) to diagnose the adolescents, which is a semi-structured interview with the adolescent and parents. The ADIS-IV-C/P manual was used for diagnoses and clinical severity ratings (CSR). A CSR of four or more (range 0–8) implies a diagnosis. The diagnostic interview was administered and recorded by the study clinicians. Six clinicians conducted ADIS-C/P interviews according to instructions. Interviews were recorded and re-rated by qualified independent raters who were blind to the original assessors' ratings. The inter-rater reliability for the presence of a specific diagnosis was 0.91. CSRs for primary, secondary, and tertiary diagnoses had inter-rater reliability of 0.91, 0.94, and 0.97, respectively.

2.5.2 Clinical Global Impression - Severity Scale (CGI-S)

The CGI-S (Guy, 1976) was used to assess global impairment and functioning as reported by clinicians. The CGI-S is a tool that determines the severity of a patient's condition. A total of seven components are included in this assessment, with the extent of disease severity ranging from 1 (normal) to 7 (extremely ill). Significant relationships have been reported between the CGI-S scores and self-reported measures of anxiety, melancholy, daily functioning, life quality, etc. (Zaider et al., 2003). In the present study, the CGI-S demonstrated exceptional reliability (split-half coefficient =. 92).

2.5.3 Family Accommodation Scale Anxiety (FASA)

The FASA is the most commonly used tool to evaluate the extent of family accommodation in the presence of child anxiety symptoms (Lebowitz et al., 2013). The scale requires the parents to rate 13 items on a scale of 0 ("no accommodation or never") to 4 ("daily"). FASA has good convergent and divergent validity, internal consistency, and test–retest reliability (Lebowitz et al., 2013; Lebowitz, Marin, & Silverman, 2020). The current study used the

FASA total accommodation score, which shows a strong internal consistency (Cronbach's α = 0.92). In FASA, the mean of both the parents' scores was used in 36.1% of the cases. In cases where only the mothers' (46.7%) or fathers' (9.5%) self-rated questionnaires were available, these were used alone. The mother–father agreement was strong (Cronbach's α = 0.82), indicating that merging the scores was fair.

2.5.4 Patient Health Questionnaire Depression Scale (PHQ-9)

The PHQ-9 (Kroenke et al., 2001) assesses the extent and number of parental depressive symptoms. The PHQ-9 was completed separately by mothers (n = 79) and fathers (n = 50) and the questionnaire comprises 9 items rated on a 4-point scale, with a maximum total score of 27. The PHQ-9 has demonstrated good psychometric properties (Kroenke et al., 2001). The internal consistency of the current sample was good as well (Mother α = 0.84; Father α = 0.86).

2.5.5 Spence Children's Anxiety Scale (SCAS)

The SCAS has often been utilized as a tool for evaluating the symptoms of anxiety in children and adolescents (Spence, 1998). The SCAS comprises 38 items, each of which is rated on a 4-point Likert scale ranging from 0 to 114. The reliability coefficient for 6-month retests was 0.71, and there were significant associations with other anxiety measures (Spence, 1998). The SCAS was rated by adolescents (SCAS-C), fathers (SCAS-F) and mothers (SCAS-M). In several analyses, the ratings of the mothers and fathers were combined (SCAS-P) when there were no specific hypotheses regarding differences between them. In the present project, the SCAS-C revealed exceptional reliability (Cronbach's coefficient = 0.90) in the provided sample, whereas the SCAS-P demonstrated adequate reliability (Cronbach's coefficient = 0.87).

2.5.6 Systemic Therapy Inventory of Change (STIC)

Pretreatment screening for parental ELM included seven items from the STIC's family of origin subscale (Pinsof, 2017). The STIC was originally developed to measure change over time based on a multisystemic family perspective (Pinsof, 2017). In the present study, ELM was determined to be present if parents scored higher than 0 in any question; 50% of the mothers and 25% of the fathers had ELM. Of these, 17% of the mothers and 6% of the fathers additionally reported experiences of substance or alcohol abuse without other ELM, and it was considered reasonable as a proxy for ELM. See Paper III for information on questions taken from STIC.

2.5.7 Measures of Feasibility in Routine Care

To develop a more comprehensive understanding of the feasibility of *RISK* treatment in routine clinical care, data regarding several additional measures were collected, as described in the following. Data regarding the mental health service usage of the participants was gathered to ascertain the amount of treatment participants had received prior to enrolling in the present research. The overall impression of the adolescents regarding the treatment was assessed via a single question. At posttreatment, adolescents rated the likelihood of recommending *RISK* treatment to a friend struggling with anxiety on a scale from 1 to 10 (1 = not sure, 10 = very sure). During treatment, clinicians determined whether school personnel had been contacted by phone and were actively involved (i.e., planning or facilitating exposure practice) in the treatment plan. Furthermore, during the treatment period, parents also rated how well they thought school personnel were adhering to treatment implementation on a scale from 1 to 5 (1= very poorly, 5 = very good).

2.6 Statistical Analyses

2.6.1 General Statistical Strategy

Analyses were performed using JASP and R software (JASP, 2020; R Core Team, 2020) using the brms, lme4, and BayesFactor packages (Bates et al., 2014; Bürkner, 2017; Morey et al., 2021). Power calculations were conducted using R software, the BFDA package, and G*power software (Faul et al., 2007; R Core Team, 2020; Schönbrodt & Wagenmakers, 2018). All analyses were performed using intent to treat approach unless otherwise specified.

All the analyzed data were assessed for normality, presence of outliers, missing data, and clustering of data. Simpler models were preferred over more complex models when possible, which facilitated the avoidance of overfitting models since it has little usefulness in real-world applications (Burnham & Anderson, 2002).

Missing data were inspected via Little's Missing Completely At Random (MCAR) test, visual inspection, and test of differences between missing and non-missing data (van Buuren, 2021). Regarding pretreatment and posttreatment data, the overall proportion of missing data was 10%, with 56% of cases having missing data. Data were mainly missing due to treatment discontinuation and incomplete responses by participants who completed the treatment. In the data obtained between treatment sessions, 22.6% were missing due to absenteeism in sessions or incomplete responses. The results of Little's MCAR test were not significant, and there was no other indication that data were not MCAR. Multiple imputation with predictive mean matching and full-information maximum likelihood procedures were conducted to handle missing data.

2.6.2 Bayesian Methods

Bayesian procedures were used throughout the project since their validity is not heavily dependent on randomization (Saint-Mont, 2015). Additional benefits of using Bayesian procedures included monitoring of the data during collection, which ensured that the trial could be stopped or altered if necessary (Schönbrodt et al., 2017). Such procedures also allowed the specification of complex models and they could be used when statistical power was low (Dienes, 2014; Schuurman, 2016).

Bayesian models were estimated with Metropolis-Hastings Monte Carlo (Hastings, 1970), using 3 chains, 10,000 iterations, and 2500 burn-ins. Effective sample size and Gelman-Ruben statistics checked the convergence of the models. Bayes R^2 and posterior predictive checks determined whether the model fit (Gelman et al., 2018).

The posterior probability, the Bayes Factor, and the highest posterior density interval (HPD) were used as inferential statistics. The posterior probability is the believed probability of a hypothesis after observing data. Thus, if the posterior probability of H_0 is 2%, it means that the researcher has 2% probability that H_0 (null hypothesis) is true. Often the *p*-value misinterprets this (Greenland et al., 2016). The Bayes Factor describes the weight of evidence in the data for two competing hypotheses. In this project, the Bayes Factor H_1/H_0 (BF_{10}), which describes how much more evidence there is in the data for H_1 compared to H_0. If H_1 and H_0 are equally probable before treatment, than the BF_{10} corresponds to the posterior probability of H_1 compared to H_0. The HPD interval represents the range within which the true parameter value is expected to be. In the current project the 95% HPD is used, and this can be interpreted as the researcher having 95% belief in the statement that the parameter is within this interval. This is what the confidence interval is often erroneously interpreted as (Greenland et al., 2016).

Bayesian analyses require that a prior belief be specified. The current project has adhered to the school of "objective Bayesian," which attempts to specify priors such that conclusions are based primarily on observed data (Martin & Liu, 2015). For continuous outcomes, a normal prior with mean 0 and 2 SD was used. For binary outcomes in logistic regressions, a normal prior with mean 0.5 and 2 SD defined the parameters. As recommended for Bayesian procedures (Depaoli & van de Schoot, 2017), it was also assessed how robust results were to different priors, and it was found that results were similar across different priors.

2.6.3 Methods Specific to Paper I

The primary outcomes in this paper were defined by whether remission of anxiety diagnoses occurred. Secondary outcomes involved changes in adolescent and parent-reported adolescent anxiety symptoms and clinical global impression as reported by clinicians. Furthermore, clinical significant change, feasibility of treatment, and impact of primary diagnosis was assessed by designing the research study to utilize a single-arm open trial compared to a meta-analysis of CBT's effectiveness in treating child and adolescent anxiety (Wergeland et al., 2021). A meta-analysis that included children was chosen due to the lack of studies that only included adolescents in routine clinical care.

Testing equality, superiority, and inferiority hypotheses simultaneously was achieved using Bayesian Analysis of Informed Hypotheses (Gu et al., 2018). A Bayesian logistic regression assisted in evaluating binary outcomes. ANOVA and Bayesian multinomial logistic regression were employed for dichotomous outcomes. Using procedures outlined by Schönbrodt et al. (2017), the required target sample size was 102. The estimation used a power of.80, a posttreatment, remission of 50%, and a treatment dropout rate of 20%. The final sample was 90. Based on 10,000 simulations, the type II error rate approached zero, while the type I error rate was projected to be .01.

Reliable and clinical significant change was defined for the SCAS-C/P and CGI-S using methods outlined by Jacobson and Truax (1991). Clinically significant change was defined as having a reliable change and being measured within normal range. Feasibility of treatment in routine clinical care was assessed through assessments of care usage before and after treatment, adolescents overall impression of treatment and parent ratings of school participation.

2.6.4 Methods Specific to Paper II

The present study aimed to assess the directional relationship between family accommodation and adolescent anxiety symptoms during treatment. The sample collected in the substudy was extracted from the open-label, single-arm trial described in Paper I. The participants with a primary diagnosis of OCD were excluded. Aside from differences in diagnostic composition there were no other significant differences between the sample in Papers I and II. The directional relationship between family accommodation and adolescent anxiety symptoms was assessed using a multilevel bivariate autoregressive cross-lagged model that analyzes the relationship between two variables at an original and future point (Schuurman et al., 2016). This research design used the cross-lagged model to examine the influence of family accommodation on adolescent anxiety symptoms from earlier to later sessions. To avoid extensively complex models, confounding factors were excluded. The fit of models was assessed with Bayes R^2, and differences between individuals were analyzed with intraclass correlation coefficients. All variables were person-mean centered.

The sample size used in this study was judged to be sufficient based on prior research with similar complex models (Hoffart & Johnson, 2020; Schuurman et al., 2016). Based on simulations, an expected 80% power to detect effects was predicted. The power simulations had the following

assumptions: the intraclass correlation coefficient, cross-lagged associate magnitude, and cross-lagged association were 02, 0.07, and 0.05, respectively.

2.6.5 Method Specific to Paper III

This research aimed to understand how parental ELM affected adolescent anxiety symptoms before, during, and after treatment, as well as how the effectiveness of the treatment was mediated by parental depressive symptoms. Analyses were based on data from the open-label, single-arm trial of CBT for adolescents with anxiety outlined in Paper I (*RISK*).

Independent samples T-tests were used to assess pretreatment differences. The effect of parental ELM on the treatment outcome was assessed using multilevel models, which provided flexibility in addressing nested structures and missing data (Hayes, 2006). JASP's mediation module was used to analyze mediation (JASP, 2020). In all the investigations, parental ELM was dichotomized to identify ELM (i.e., present or not).

Power calculations were performed for all analyses using G*power (Faul et al., 2007). In tests that analyzed pretreatment differences between adolescents of parents with or without ELM, the power to detect an effect of Cohen's d = 0.6 was .80 and .50 for mothers and fathers, respectively. In regressions to assess the influence of parental ELM on adolescents treatment outcomes, the power to detect an effect of Cohen's d = 0.3 was .80 and .50 for mothers and fathers, respectively. Based on recommendations from Fritz and Mackinnon, (2007) 0.80 power was expected for the detection of mediation pathways larger than Cohen's d = 0.4. Given the relatively small sample of assessments completed by fathers and the risk of committing type II errors, Bayesian analyses was conducted for all the tests involving the effects of father ELM.

The analyses were adjusted using Benjamini–Hochberg procedures,

which reduced the risk of type II errors and ensured that the family-wise error risk remained at the specified level (i.e., .05) despite multiple comparisons (Benjamini & Hochberg, 1995).

To aid the interpretation of potential differences in the outcomes between informants, the intraclass correlation (ICC) was calculated as a measure of inter-rater agreement (Cicchetti, 1994). Inter-rater agreement was good between CSR and CGI-S ($\kappa = .72$) and fair between SCAS-C and SCAS-M ($\kappa = .53$). For all the other outcomes, inter-rater agreement was poor ($\kappa < .40$)

3. Results

3.1 Summary of Paper I

In Paper I, the aim was to compare the effectiveness of the *RISK* treatment with that found in a meta-analysis of CBT for child and adolescent routine clinical and community care.

At posttreatment-treatment many adolescents achieved remission from all anxiety diagnoses (42.3%, 95% HPD [37.6, 47.0]), although BAIN indicated that effectiveness of *RISK* was less than benchmark (posterior probability = .98). At the 12-month follow-up most of the adolescents achieved remission from all anxiety disorders (79.5%, 95% HPD [74.7, 84.2]), with BAIN indicating effectiveness greater than benchmark (posterior probability ≈ 1).

At posttreatment, effectiveness on SCAS-C (d = 0.36, 95% HPD [0.26, 0.46]) and SCAS-P (d = 0.29, 95% HPD [0.19, 0.39]) were equivalent to the benchmark (posterior probability = .62 and .48, respectively). On CGI (d = 1.21, 95% HPD [1.15, 1.40]) and severity of primary diagnosis (d = 1.61, 95% HPD [1.29, 1.55]), effectiveness was greater than the benchmarks at posttreatment (posterior probability ≈ 1). Some participants were categorized as having clinically significant change at posttreatment in SCAS-C, SCAS-P, and CGI (32.2%, 10.0%, and 45.2%, respectively). At the 12-month follow-up, effectiveness on SCAS-C (d = 0.56, 95% HPD [0.47, 0.67]) was greater than the benchmark (posterior probability = .99). At the 12-month follow-up, effectiveness on SCAS-P (d = 0.49, 95% HPD [0.39, 0.59]) was equivalent to the benchmark (posterior probability = .92). In terms of severity of the primary diagnosis (d = 2.37, 95% HPD [2.19, 2.55]), the effectiveness was greater than the benchmarks at the 12-month follow-up (posterior probability ≈ 1). At the 12-month follow-up, many participants were categorized as having clinically

significant change on SCAS-C, SCAS-P, and CGI (50.3%, 32.5%, and 74.0%, respectively).

A primary diagnosis of social anxiety disorder predicted a lower probability of remission (*OR* = 0.91, 95% HPD [0.80, 0.99]). Additional therapy between posttreatment and follow-up also predicted a lower probability of remission (*OR* = 0.90, 95% HPD [0.87, 0.93]). The number of treatment sessions conducted before pretreatment did not affect the results according to results. Adolescents indicated that they would recommend the treatment to a friend (Median = 8, on a scale from 1 to 10), and few participants did not complete treatment (11.1%). The majority of school personnel were actively involved in treatment (76.5%), and their adherence to treatment methods was rated as *very good* (24.9%) or *good* (45.3%) by parents.

The findings from Paper I indicate that *RISK* is effective and feasible in routine clinical care. A substantial proportion of adolescents have achieved full remission at 12-month, with a low degree of treatment non-completion.

3.2 Summary of Paper II

In Paper II, the directional relationship between family accommodation and adolescent anxiety during treatment was assessed.

During the current session, the standardized effect of previous session family accommodation on anxiety was 0.11 (95% CI [0.06, 0.17]), but the previous session adolescent anxiety on family accommodation was 0.23 (95% CI [0.08, 0.38]). The difference between both cross-lagged effects was substantial (posterior probability of difference = .91). The model exemplified a good fit for predicting adolescent anxiety (R^2 = .26) and family accommodation (R^2 = 0.30), having low degrees of between-person differences (ICC = .10).

The findings from Paper II indicate a bidirectional relationship between

family accommodation and adolescent anxiety during treatment and a more influential effect of the latter on family accommodation.

3.3 Summary of Paper III

In Paper III, the aim was to assess the association between parental ELM and adolescent anxiety symptoms and clinical impairment at pretreatment. Furthermore, the study also assessed the effects of ELM on the treatment outcomes and the mediating role of parental depression.

At pretreatment, mother ELM was associated with significantly higher adolescent-reported anxiety symptoms (SCAS-C) ($t(77) = 3.27$, $p = .002$, $d = 0.75$) and mother-reported adolescent anxiety symptoms (SCAS-M) ($t(77) = 3.63$, $p < .001$, $d = 0.76$); however, there was no association between mother ELM and fathers-reported adolescents anxiety symptoms (SCAS-F), CGI, or CSR. At pretreatment, father ELM was associated with higher SCAS-F ($t(48) = 5.62$, $p < .001$, $d = 1.35$), but there was no association between father ELM and SCAS-C, SCAS-M, CGI, or CSR.

Mother ELM was found to negatively affect the treatment outcomes on SCAS-C and SCAS-M (p-values < .01). Father ELM was found to negatively affect the treatment outcomes on SCAS-F ($p < .01$); however, it did not significantly predict the outcomes on SCAS-C ($p = .45$). Furthermore, Bayesian re-analysis suggested that the null and alternative hypotheses were equally probable ($BF = 0.72$). Neither mother nor father ELM was found to affect the treatment outcomes of CSR or CGI (p-values > .05).

Maternal depressive symptoms were found to mediate the association between mother ELM and SCAS-C (standardized estimate = 0.02, SE = 0.01, $p = .04$), and paternal depressive symptoms mediated the association between father ELM and SCAS-F (standardized estimate = 0.07, SE = 0.02, $p < .01$). Likewise, maternal depressive symptoms mediated the association between

mother ELM and SCAS-M (standardized estimate = 0.08, SE = 0.03, p = .01).

The findings of Paper III indicate that mother and father ELM are associated with higher adolescent anxiety symptoms. Additional findings suggested that the presence of mother or father ELM negatively affected the treatment outcomes of adolescents' anxiety disorders, and this relationship is mediated by parental depressive symptoms.

4. Discussion

The present thesis examined the effectiveness of transdiagnostic group CBT treatment, called *RISK*, in routine clinical care and investigated parental factors that may affect the treatment outcomes. Specifically, the directional relationship between family accommodation and adolescent anxiety as well as the relationship between parental ELM, parental depression, and adolescent anxiety were investigated. Paper I found that treatment was inferior to benchmark at posttreatment, with only 42.3% adolescents achieving remission from all anxiety diagnoses. However, Paper I also found the treatment to be superior to the benchmark at the 12-month follow-up, with 79.5% adolescents achieving remission from all anxiety diagnoses. In addition, the treatment yielded a low attrition rate (11.1%), and participating adolescents expressed an intention to recommend *RISK* to a friend struggling with anxiety. Paper II found that there was a bidirectional relationship between family accommodation and adolescent anxiety, with anxiety having a stronger influence over family accommodation. In Paper III, parent-reported adolescent anxiety symptoms were higher in adolescents whose parents had experienced ELM. Mothers' ELM predicted a higher rate of adolescent-rated anxiety symptoms. Furthermore, it was found that parental depression mediated the association between parental ELM and adolescent anxiety symptoms.

Across the three papers, findings suggest that the *RISK* treatment enhanced effectiveness at 12-month follow-up, and the treatment process and outcomes were affected by parental behavior and mental health. The findings from Paper II may explain why treatment effectiveness was not enhanced at posttreatment, given that change in family accommodation was not strongly influential in the short term. Alternatively, the findings from Paper III show that negative effects of mother ELM on the treatment outcomes may have diminished effectiveness at posttreatment; however, higher rates of parental participation in RISK may have reduced the negative effect of ELM as

enhancement was evident at the 12-month follow-up. In the following sections and subsections, the individual papers and their relation to the overall project and questions related to methodological strengths and issues are discussed. Following this, the implications for clinical practice and future research are presented.

4.1 Discussion of Main Findings

4.2.1 Effectiveness of RISK Treatment in Routine Care

Given that *RISK* was designed with the goal of increasing treatment effectiveness, it was surprising that the posttreatment outcomes were lower than the benchmark. A potential explanation for this inferior outcome might be the usage of the present sample that only included adolescents, whereas the benchmark also included children (Wergeland et al., 2021). Adolescents may benefit less from CBT for anxiety due to more entrenched problems and the higher prevalence of social anxiety (Baker et al., 2021; Waite & Creswell, 2014). The prevalence of social anxiety disorder (SAD) as a primary diagnosis in the benchmark study was lower (17%–39%) than in the current sample (52.4%). In line with previous research (Ginsburg et al., 2018; Hudson et al., 2015), a primary diagnosis of SAD was found to negatively affect the treatment outcomes. Thus, differences in age groups and prevalence of SAD may explain why *RISK* did not outperform the benchmark at posttreatment.

In terms of remission at posttreatment, *RISK* outperformed studies only involving adolescents (Baker et al., 2021) and showed greater improvements than the benchmark at the 12-month follow-up. These results suggest the possibility of improving treatment for adolescents with anxiety disorders by including a high degree of in-session exposure and the involvement of both parents and school personnel. However, it still remains impossible to determine the aspects of the intervention that are necessary and the adequate amount of treatment required to enhance its effectiveness. Since the enhanced treatments

effectiveness was visible at the follow-up and not posttreatment, understanding how family and school involvement affected adolescents after treatment completion by encouraging adherence to treatment could provide insights into the nature of the treatment used in this study. Treatment adherence predicts positive outcomes for adolescents with anxiety and is facilitated by adult support (Lee et al., 2019). The extensive involvement of parents and school personnel may have helped uphold an adult support system after treatment completion. This is in line with previous findings that the added benefits of parental involvement are most visible after treatment ends (Kreuze et al., 2018; Manassis et al., 2014). Additionally, the extensive parental involvement may have improved trust and communication within families, which may have reduced risk of relapse (Ebbert et al., 2019).

4.2.1.1 *RISK* Treatment Format in Routine Care.

The feasibility of the *RISK* treatment was determined by low treatment dropout rates, reports that adolescents would recommend this treatment, and that school participation was considered "good" or "very good" by parents. The feasibility and effectiveness of *RISK* was found to be especially promising given that treatment was delivered in a transdiagnostic format with low levels of external supervision. Issues related to transdiagnostic formats and supervision in routine clinical care as well as the time and resources spent to make *RISK* feasible in routine clinical care are discussed below.

In line with previous research on transdiagnostic formats (Evans et al., 2021), In Paper 1, adolescents with SAD as a primary diagnosis were found to have lower rates of remission than adolescents with other primary diagnoses. Although remission rates were relatively lower, the majority (75.5%) of adolescents with SAD as their primary diagnosis achieved full remission at the 12-month follow-up. These findings nuance current recommendations that adolescents with SAD should receive disorder-specific treatment (Spence & Rapee, 2016) and indicate that transdiagnostic CBT *can* be effective for SAD.

Similarly transdiagnostic can be effective for OCD, since all adolescents with OCD as their primary diagnosis were in remission at the 12-month follow-up. This refutes the current recommendations that OCD should be treated separately from other anxiety disorders (Freeman et al., 2018). Although disorder-specific treatments may further increase effectiveness for the targeted individual disorder, the transdiagnostic format is beneficial in routine care. In fact, in routine care, there may not be sufficient patients to offer specific treatments for all anxiety disorders.

Consistent with the use of transdiagnostic groups, the resources required to perform *RISK* are important considerations in routine clinical care. The *RISK* treatment involves 38 hours of treatment delivered by four clinicians, whereas alternative evidence-based treatments for adolescents with anxiety in routine clinical care involve 10–20 hours of treatment delivered by 1–2 clinicians (see Table 1). The extra resources spent in *RISK* were intended to increase effectiveness and meet needs as well as accommodate for preferences of adolescents as described previously (Waite & Creswell, 2014; Baker et al., 2021; Persson et al., 2017). Results from the substudy in Paper I suggest that the goal of enhancing effectiveness and adolescent acceptability was achieved using *RISK* treatment, although it may be difficult to implement the treatment in all settings due to the lack of resources. Conversely, it is important to consider that extra resources spent during *RISK* treatment may reduce costs at an organizational level and thus represent investments rather than sunken costs in future treatments. Facilitating an increase in parental and school involvement may improve cost-effectiveness by promoting attendance and adherence (Nock & Ferriter, 2005). Another organizational-level benefit is that the transdiagnostic group format allows for more efficient use of qualified clinicians. The transdiagnostic group format also enables more experienced clinicians to supervise novice clinicians *in vivo*. In this regard, it is important to note that only 4/20 clinicians participated throughout the study, and treatment

allowed 9 clinicians with no prior education or training in CBT to deliver effective treatment.

In relation to the overall aim of the thesis, the substudy in Paper I addresses the potential effectiveness and feasibility of the *RISK* treatment for adolescent anxiety in routine clinical care. The corresponding findings indicated that the treatment was acceptable for adolescents and that parental and school involvement were also possible within the settings of routine clinical care. However, the *RISK* treatment enhanced effectiveness at the 12-month follow-up but not at posttreatment.

4.2.2 Relationship between Family Accommodation and Adolescent Anxiety

In line with previous literature (Schleider et al., 2018), Paper II showed that the reduction in family accommodation reduced adolescent anxiety. This supports treatment models currently built for children that are delivered only to parents and aim at treating anxiety by reducing family accommodation (Lebowitz, Marin, Martino, et al., 2020; Zavrou et al., 2019). However, the present findings indicate that only treating parents would be suboptimal for adolescents. This can be explained by the fact that anxiety symptoms have a greater influence than family accommodation in a bidirectional relationship. The findings are in line with other studies that have found bidirectional relationship between parent behavior and child anxiety (Van Zalk & Kerr, 2011) (Silverman et al., 2009). Overall, this suggests that family accommodation plays an important role in treatment of anxiety, but it should not replace direct work with adolescents. However, these main findings from Paper II must be viewed within several characteristics of the substudy including the age of participants, prevalence of social anxiety, how *RISK* treatment differs from alternative treatments, and the measurement timing of family accommodation and adolescent anxiety.

Previous studies of the relationship between family accommodation and child

anxiety have focused primarily on children between 2–8 years old (La Buissonnière-Ariza et al., 2018; Schleider et al., 2018; Lebowitz et al., 2013). The higher age of the current sample may explain why anxiety symptoms are more influential on family accommodation as older adolescents interact less with parents. Since there is disagreement on how age affects accommodation it is not certain whether age influences the relation between accommodation and anxiety. Some studies have suggested that higher age increases the amount of accommodation (La Buissonnière-Ariza et al., 2018); others assert that age does not affect accommodation (Lebowitz et al., 2013); some have even have found it decreases levels of accommodation (Schleider et al., 2018).

In relation to the inclusion of only adolescents, it must also be considered how the high prevalence of social anxiety and low prevalence of separation anxiety in the sample may have affected findings. In line with the findings from this study, social anxiety is considered to be influenced by parental behavior that may exacerbate or buffer against anxiety (Spence & Rapee, 2016), as also shown in general models of how parental behavior affects child anxiety (McLeod et al., 2007). Similarly, previous studies on family accommodation have not discovered a unique effect of social anxiety compared to other diagnoses. In contrast, separation anxiety is associated with higher degrees of family accommodation. Thus, the relationship between FASA and SCAS found in this study may not generalize to younger children where separation is more prevalent.

To further understand the generalizability of the findings from this substudy, it is also important to consider the timing of measurement. The current substudy assessed the family accommodation and anxiety symptoms at each session and analyzed how they affected one another at the next session. However, it is possible that parental factors change at a slower rate than youth symptoms, which is a potential explanation for why anxiety symptoms were more influential than family accommodation. Consistent with this argument,

previous studies suggest that parental factors affect treatment in the long term but not in the short term (Kreuze et al., 2018; Manassis et al., 2014). Thus, it may be that the directional relationship between FASA and SCAS is reversed when measured monthly instead of from weekly. However, future research is needed to better understand this.

In relation to the overall aim of the thesis, the substudy in Paper II addresses how family accommodation affects anxiety symptoms across sessions during treatment. The findings from Paper II indicated that adolescent anxiety and family accommodation had a bidirectional relationship and that adolescent anxiety was more influential than family accommodation. This may explain why effectiveness of treatment was not improved after treatment, given that the influence of parents on adolescents is relatively lower in the short term. However, it may be that parents' influence on adolescents' anxiety is more influential in the long term. This is consistent with the findings from Paper I that indicate that effectiveness was enhanced at 12-month follow-up. Given the cost of involving parents on the one side and the potential to enhance treatment effects on the other side the findings from Paper I and II warrant further research. Specifically, it would be important to assess the directional relationship between family accommodation and adolescent anxiety over a longer time.

4.2.3 Influence of Parental Early Life Maltreatment and Depression

In accordance with the current literature, parental ELM was associated with adolescent and parent-rated ELM at pretreatment (Plant et al., 2018). However, parental ELM was not associated with clinician-rated global impression and severity of anxiety. These findings are in line with research on parental ELM and children in non-clinical settings, which also show that raters outside the family do not observe differences due to parental ELM (Koverola et al., 2005, Morrell et al., 2003). The lack of observed difference by outside raters may be

due to parental depression, which is associated with ELM (Miranda et al., 2013; Springer et al., 2007). According to this perspective, parents with ELM perceive their child as more anxious than warranted due to their own depressive biases. As an alternative explanation, it has also been suggested that parents with ELM may be more aware of their child's internalizing symptoms because of their own experience with such symptoms (Morell et al., 2003). In support of this, the current substudy found SCAS-C to have highest inter-rater agreement with mother-rated SCAS-P (κ = .53), whereas other variables had low degrees of inter-rater agreement (κ < .40).

A surprising finding was that mother — but not father — ELM predicted poorer adolescent-rated anxiety outcomes. The finding that mother ELM negatively affected the outcomes is in line with literature that suggests that parental ELM is associated with anxiety-inducing home environments (Leslie & Cook, 2015; Newcomb & Locke, 2001). However, such associations would also be expected to be present in fathers with ELM. The finding is particularly astonishing given the previous finding that father, but not mother, rejecting behavior was associated with anxiety in adolescents (Verhoeven et al., 2012), which is in contrast to the findings of the current substudy. Potential explanations for the unique role of mothers might be that mother ELM affects early attachments and may induce epigenetic changes in the child during pregnancy (Plant et al., 2018). However, the current study had low power to detect the effects of father ELM, and Bayesian analyses indicated that evidence regarding whether or not fathers ELM affected the anxiety symptoms of adolescents was inconclusive.

The substudy found mother depression to mediate the association between mother ELM and adolescent-rated anxiety symptoms. Previous studies also report similar findings, suggesting a connection between parental ELM, parental depression, and child anxiety (Plant et al., 2018). These findings have important clinical implications for the determination of how parents,

particularly mothers, are involved in the treatment of child and adolescent anxiety. In the current treatment formats, parents are often involved to provide support to the child in their treatment (Jónsson et al., 2015; Nauta et al., 2003; Wergeland et al., 2014). However, all parents may not be in a position where they can provide support to their child in such a manner (Lundkvist-Houndoumadi & Thastum, 2017); hence, treatments should focus on building the capacity of parents to support their child. It has been recommended that mothers with ELM could benefit from interventions aimed at reducing psychological distress and promoting sensitive caregiving practices (Plant et al., 2018).

A potential critique of Paper III is that it relies on retrospectively self-reported experiences of ELM like other studies regarding parental ELM. With a few exceptions (Yehuda et al., 2001; Yehuda et al., 2008), other studies regarding parental ELM have used retrospective self-report for assessing ELM (Koverola et al., 2005; Miranda et al., 2013; Zalewski et al., 2013). Such a design risks the introduction of recall bias. Particularly, in the context of parents with depressive symptoms, it could be assumed that parents have exaggerated negative views regarding their childhood. However, prospective studies of recall of traumatic events have found that these are generally under-remembered compared to what has actually occurred (Lalande & Bonanno, 2011). Furthermore, although experience of distress increases the recall of traumatic events it does not lead to over-remember but rather reduces under-remembering (Lalande & Bonanno, 2011). If recall bias was present, it would thus be suspected to have caused under-reporting of ELM and not over-reporting. This may be a potential explanation as to why a lower proportion of fathers reported ELM than mothers.

In relation to the overall aim of this thesis, the substudy in Paper III addresses how parental ELM and depression affected the outcomes of adolescent anxiety treatments. The findings from Paper III indicated that

mothers ELM negatively affected the anxiety symptoms of adolescents. Furthermore, it was found that depressive symptoms of mothers mediated the association between mother ELM and adolescent anxiety symptoms. The prevalence of ELM in parents may have affected family accommodation assessed in Paper II as many parents were not in a position to change their accommodation behavior due to their own issues. In relation to the enhanced effect of the treatment at 12-month follow-up found in Paper I, it should be noted that the parent groups in *RISK* may have aided in reducing psychological distress and promoted sensitive caregiving practices, which have been suggested as potential pathways to reduce the negative effects of parental ELM on child anxiety.

4.4 Strengths of the Studies

Strengths of this project included its naturalistic approach, which closely resembled routine clinical care. The *RISK* treatments during the present study were conducted in a manner similar to how they were performed before this study, and they will continue to be conducted in the same way in the future. The importance of this is that the findings have a large degree of ecological validity.

The studies included multiple perspectives from clinician, parents, and adolescents ratings. The use of multiple evaluators provided broader information than would have been obtained if only one evaluator was used. Additionally it may be particularly important to assess multiple raters when investigating adolescents, as parents and adolescents may frequently disagree (De Los Reyes et al., 2015).

Another strength was that the studies assessed adolescents in routine clinical care, evaluated their full remission (loss of all anxiety disorders), and included a 12-month follow-up. These factors were notably lacking in previous studies (Baker et al., 2021), and are essential to develop effective treatments in

routine clinical care.

Additionally, the studies used Bayesian methods, which offer several advantages for clinical child and adolescent psychology (Bertelsen et al., 2022). In the current thesis, these methods allowed for the assessment of superiority, inferiority, and equivalence simultaneously (Paper I), they allowed for the specification of complex models (Paper II) and for non-dichotomous conclusion when power was low (Paper III).

4.5 Methodological Limitations

Despite the strengths of the current project, there are a number of methodological limitations that must be taken into account when evaluating the validity and generalizability of the project. Specifically, one must consider the lack of control group and randomization as well as how and why Bayesian statistics were used. These considerations are related to the unconventional choice to not conduct a RCT. Furthermore, researcher allegiance, lack of fidelity measures, and sample characteristics are also important limitations to consider. Below, the following are discussed: lack of randomization, elements of Bayesian analysis,, sample characteristics,, researcher allegiance, lack of fidelity measures, and participants' self-selection into study.

4.5.1 Lack of Randomization

A limitation of the current thesis is the lack of randomization. This limitation impacts methodological considerations for conducting comparisons of comparable conditions (Saint-Mont, 2015). Comparability can be achieved by matching the groups such that individuals are comparable (Senn, 2000). This is commonly done via randomization such as in RCTs; hence, RCTs are considered a gold standard for evidence-based research in child and adolescent clinical psychology (Silverman & Hinshaw, 2008). Randomization is also

necessary to guard against unknown confounders and to ensure the validity of classical statistical procedures (Hirschauer et al., 2020; Rosenbaum, 2002, 2002; Saint-Mont, 2015).

Although useful, RCTs pose several difficulties for research in routine clinical care and were deemed infeasible in the current thesis. First, RCT demands extra resources from clinics due to logistics and for ensuring treatment for the many adolescents who decline participation and who must be treated outside of the RCT (Saarijärvi et al., 2020). Second, in RCTS, treatment arms must be believed to be equally effective (Fries & Krishnan, 2004). Third, RCTs pose other ethical issues as participants commonly assume that randomization involves receiving the treatment that is best for them (Jepson et al., 2018). This raises the issue of whether participants are truly in a position to make an informed decision about participation. Lastly, the benefits of RCTs are only achieved when a large number of participants (> 150) are included, and randomization may not enhance validity without that number of participants (Saint-Mont, 2015).

Given the hospital setting and available resources, it was deemed infeasible to conduct an RCT for the current study, and an open trial design was chosen instead. To ensure statistical validity, Bayesian statistics were used (Bertelsen et al., 2022). Despite being statistically coherent, a limitation of the research design is vulnerability to the influence of several biases on the results. In this thesis, measures were adopted to reduce the risk of potential bias, including choice of exclusion criteria, multiple raters, and independent re-rating of diagnostic interviews. Exclusion criteria were minimal, and the study included those adolescents who would have received treatment before the study began. Such a procedure was aimed at preventing selection bias. Biases in assessment were minimized by including multiple raters on multiple measures and conducting independent re-ratings of diagnostic interviews. Despite these

efforts, it is unknown to what degree the results may have been biased.

In addition to potential bias, the lack of randomization also signifies that causality could not be addressed in the three papers. With regard to ELM (Paper III), this is a core issue in the research literature, where randomization has not been used to understand the effect of ELM (Plant et al., 2018). Although a methodological limitation, it may be impossible to achieve randomized designs since it is not ethical to randomize to receive ELM (Plant et al., 2018). Likewise causality is not established in Paper II; however, the directionality between family accommodation and adolescent anxiety was examined. The prospective methods of the current project could be used to assess ELM and factorial design and SMART trials could be beneficial for studying the processes and outcomes of treatment (Lei et al., 2012; Watkins & Newbold, 2020). Both factorial design and SMART trials would have ensured that all the participants received the best available treatment that they preferred, thereby conforming to the ethical guidelines following by the hospital.

4.5.2 Bayesian Priors

A second methodological limitation that is important for all the three papers is the type of *priors* used in the Bayesian analyses. A necessary step in Bayesian analyses is specifying a prior, which encapsulates what is known before an experiment is conducted. In the current project, priors were specified with the aim that their knowledge should exert little influence over the conclusions and that they are primarily guided by observed data. This was primarily done for pragmatic reasons and with the goal of adhering to conventions within the scientific community wherein subjective priors are suspected to be criticized. However, such attempts at objectivity are not guaranteed to work, and it is important to consider an inherent lack of objectivity in all statistical knowledge (Leamer, 1983). Whereas Bayesian methods contain subjectivity in terms of priors, frequentist approaches contain subjectivity in assumptions of normality,

choices regarding whether to test for multiple corrections, what is considered significant, and how to interpret findings in the light of power.

The disadvantages of objective Bayesian methods are that they may lose their interpretive value. That is, if the prior does not represent a degree of belief, then the posterior cannot express this either. Additionally, it seems unreasonable that each article begins with extensive background knowledge followed immediately by a prior that expresses no existing knowledge. However, in the current study, these "objective" priors are not intended to express ignorance, but rather open-mindedness, allowing the researcher to be persuaded by the data—similar to the approach of bracketing one's preconceptions that is used in qualitative methods (Tufford & Newman, 2012). Thus, they still maintain their interpretation as degrees of belief, without being overly influenced by prior expectations.

It is also important to note that the findings would not have differed in a substantial manner based on the sensitivity analyses wherein different priors were tested for each model. This is because the importance of priors diminishes as sample sizes increase, corresponding to a central limit theorem for Bayesians. In this regard, it is important to note that a definitive disadvantage of using objective priors was that a larger sample was required than what would have been required if well-informed priors had been used, and thus, the study included more participants than necessary.

4.5.3 Sample Characteristics

A third methodological limitation relates to the characteristics of the sample, which may influence the generalizability of the findings. The sample comprised adolescents who were ethnic Norwegian and there was a high number of female participants and adolescents with SAD. The lack of diversity can limit the generalization of results outside Norwegian ethnic adolescents. However, the lack of diversity is unsurprising given that non-ethnic Norwegians have a

lower usage of mental health services (Hynek et al., 2020) and are less likely to receive anxiety diagnoses compared with ethnic Norwegians (Ekeberg & Abebe, 2021).

In terms of sex, 77% of the total sample was female. This is similar to findings from a meta-analysis regarding routine clinical care, which reported that females are often overrepresented compared with males (Bear et al., 2020). In line with this, females are more likely to receive interventions for anxiety disorders than males (Merikangas et al., 2011). The overrepresentation of females may not have affected the outcomes because biological sex is not generally found to moderate outcomes of CBT for anxiety (Norris & Kendall, 2020). However, individual studies have found that females benefit particularly from CBT that involves parents (Barrett et al., 1996; Cobham et al., 1998). Thus, *RISK* treatment may be of particular benefit to females. Contrary to this, several studies with parental involvement have not found biological sex to influence the outcomes (Nauta et al., 2003; Shortt et al., 2001). Overall, it is uncertain whether the overrepresentation of females affected the outcomes, but the sample is representative of the typical adolescent population with anxiety seeking help in a public child and mental health clinic.

The large presence of SAD in the sample is also expected, given that the sample only comprised adolescents and the intervention was modified specifically to address an expected large prevalence of SAD (Waite & Creswell, 2014). A major implication of this is that the results may not be generalizable to groups where social anxiety is less prevalent. In particular, the generalization of the relationship between family accommodation and anxiety symptoms (Paper II) to populations with the primarily separation anxiety disorder is unlikely. This is because the presence of separation anxiety disorders has been found to affect family accommodation differently from other anxiety disorders (Kagan et al., 2017; Lebowitz et al., 2013).

4.5.4 Researcher Allegiance, Lack of Fidelity, and Self-Selection

Further notable limitations of the current thesis include the risk of researcher allegiance bias (Luborsky et al., 1975), lack of fidelity measurements, and self-selection into the study. With regard to allegiance bias, it is important to note that both the project manager and PhD candidate partook as clinicians during the administration of the treatment and delivering training to other clinicians. Pre-existing enthusiasm for *RISK* may have led to improved training and supervision, which may have positively affected the outcomes. Researchers' allegiance to *RISK* may have also resulted in an "honest difference" (Hollon, 1999) where the improved theoretical understanding of *RISK* further enhanced the results. On one hand the presence of an allegiance bias could be considered a critical limitation. On the other hand it is important to note that enthusiastic training, supervision, and proper theoretical knowledge are important aspects of any treatment regardless of allegiance (Wilson et al., 2011). Thus, results may not replicate in settings where proper training and supervision are not possible. Future research would benefit from an assessment of *RISK* by independent researchers in additional settings.

Another limitation is the lack of fidelity assessment in the study. Fidelity assessments were originally planned; however, technical difficulties in videotaping (i.e., battery and memory shortage, low quality filming) led to the abandonment of fidelity assessments. The lack of fidelity measurements, however, poses a limitation on the understanding of whether it was the *RISK*-specific elements that affected the results.

A final limitation was that participants were offered the option of refusing treatment. With regard to this, it is important to note that 17% of potential participants declined to participate either because they did not want to participate in the treatment or the research project. Although the attrition rate was low among adolescents who received treatment, future research should further examine why individuals choose not to partake in *RISK* and how their

treatment outcomes compare with those who receive *RISK*.

4.6 Implications for Clinical Practice

There is great need to develop interventions that increase effectiveness in adolescent anxiety in routine clinical care. Effectiveness may be increased by maximizing exposure (Whiteside et al., 2020), and there is potential for parents and school to be involved such that they increase adherence to treatment and exposure practice (Bouchard et al., 2004; Manassis et al., 2014). Results from Paper I indicate that using such an approach is effective. While RISK did not exceed the benchmarks, including children and adolescents at posttreatment, the treatment showed better results than efficacy studies in adolescents at posttreatment (Baker et al. 2021). Further, the treatment did outperform benchmarks at 12-month follow-up. These findings align with national guidelines that CBT, such as *RISK*, aimed at increasing exposure practice should be first-line treatment for adolescents with anxiety.

The findings from a Paper I are of additional importance given that treatment was delivered in routine clinical care and studied naturalistic. The sustained effectiveness was achieved with minimal additional resources given to participants, which is important in routine clinical care. Further the treatment was provided while 8/12 clinicians were replaced during the study period. Similarly, a significant proportion of participating clinicians did not have formal CBT training before starting as a *RISK* clinician. These findings are characteristic of routine clinical care, where highly qualified clinicians are scarce and there is a high turnover of clinicians. Our experiences and the results from Paper I suggest that the transdiagnostic group format is important to achieve sustainable effective treatments in routine clinical care. Given the current trend toward diagnosis-specific treatments, our findings are important and suggest that transdiagnostic group CBT is beneficial both in terms of effectiveness and sustainability of treatment.

For clinicians, it is important to understand not only what is effective, but how different aspects of interventions should be prioritized. In this regard, it is important to consider how to prioritize time spent with parents and time spent with adolescents. Results from Paper II, indicated that during treatment family accommodation had a substantial effect on adolescent anxiety symptoms from session to session. This speaks to the importance of involving parents and addressing family accommodation when treating adolescent anxiety. However, results also indicated that the relationship between family accommodation and adolescent anxiety symptoms was bidirectional, with anxiety symptoms being more influential. This means that, to a certain extent, the reduction in family accommodation preceded the reduction in anxiety among adolescents, but to a larger extent, the reduction in anxiety among adolescents preceded the reduction in family accommodation. Although treatments involving only parents addressing family accommodation have been shown efficacious for child anxiety (Lebowitz et al., 2014), the findings in Paper II suggest that interventions directed at adolescents should be prioritized above address family accommodation.

When prioritizing aspects of interventions, clinicians should also address parental factors that may inhibit treatment effectiveness. In this regard, the findings from Paper III suggest that parental depression and ELM may be important to address as these negatively impact treatment. Assessing mental health and parenting history would be important for clinicians. If parents do not have issues with mental health or indication of ELM clinicians can focus time and energy on other interventions aimed at maximizing exposure practice. However, when parents do have indications of depression or ELM, the results from Paper III indicate that it would be beneficial for clinicians to address this.

4.7 Implications for Future Research

Future research should be carried out by researchers without allegiance to *RISK*

to support the conclusions of the current thesis. In this regard, factorial and SMART designs may be a beneficial design choice to ensure validity of findings. Furthermore, future studies would benefit from more rigorous assessment of treatment fidelity, and further examination of those that decline participation.

Future research should also investigate how the effectiveness of *RISK* can be maintained while reducing costs. In 2019, a short version of *RISK* was developed, which was intended to allow delivery of "mini-*RISK*" by school personnel. Currently there is a large collaboration with Kristiansand municipality, where the aim is to implement a mini-*RISK* to all 47 schools in the municipality. At this time, 40 public health nurses and school social workers are trained in mini-*RISK* and within 2023 a total of 90 will have completed training. In addition, a digital platform called e-*RISK* is under development. Experiences with modifying *RISK* have been positive, however, research is needed to determine the effect of variations of *RISK*. Importantly, future research should assess the use of variations in a stepped care.

Furthermore, there are several aspects of the described treatment that warrant further research that have not been addressed in this thesis. First, the individual impact of school staff and parents has not been evaluated and future research should examine the relative contribution of school staff and parents in enhancing effectiveness. Second, the studies presented in this thesis only assessed family accommodation and adolescent anxiety from session to session. Future research should investigate how family accommodation and adolescent anxiety interact over longer time periods. Lastly, future research should assess the specific contribution of performing exposure practice with a parent other than one's own, and the impact of inviting important others (e.g., friends and grandparents) to participate in treatment.

5. Conclusion

The present thesis assessed the factors related to the effectiveness of a multifamily transdiagnostic group CBT (*RISK*), which included extensive exposure practice and parental and school involvement. The treatment was effective and feasible in routine clinical care settings. During treatment, it was found that family accommodation and adolescent anxiety had a bidirectional relationship from session to session, with adolescent anxiety having a stronger influence than family accommodation. It was also found that parental ELM negatively affected treatment, and this was mediated by parental depression. Research results support the use of multifamily transdiagnostic group CBT in routine clinical care for adolescent anxiety. Further, the findings support the assumption that involving parents, while maintaining a high degree of exposure practice, is beneficial for the treatment of adolescent anxiety. Future research should assess the impact of the different components of RISK on outcomes as well as the possibility of maintaining effectiveness with fewer resources.

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Doctoral Theses at The Faculty of Psychology, University of Bergen

1980	Allen, Hugh M., Dr. philos.	Parent-offspring interactions in willow grouse (Lagopus L. Lagopus).
1981	Myhrer, Trond, Dr. philos.	Behavioral Studies after selective disruption of hippocampal inputs in albino rats.
1982	Svebak, Sven, Dr. philos.	The significance of motivation for task-induced tonic physiological changes.
1983	Myhre, Grete, Dr. philos.	The Biopsychology of behavior in captive Willow ptarmigan.
	Eide, Rolf, Dr. philos.	PSYCHOSOCIAL FACTORS AND INDICES OF HEALTH RISKS. The relationship of psychosocial conditions to subjective complaints, arterial blood pressure, serum cholesterol, serum triglycerides and urinary catecholamines in middle aged populations in Western Norway.
	Værnes, Ragnar J., Dr. philos.	Neuropsychological effects of diving.
1984	Kolstad, Arnulf, Dr. philos.	Til diskusjonen om sammenhengen mellom sosiale forhold og psykiske strukturer. En epidemiologisk undersøkelse blant barn og unge.
	Løberg, Tor, Dr. philos.	Neuropsychological assessment in alcohol dependence.
1985	Hellesnes, Tore, Dr. philos.	Læring og problemløsning. En studie av den perseptuelle analysens betydning for verbal læring.
	Håland, Wenche, Dr. philos.	Psykoterapi: relasjon, utviklingsprosess og effekt.
1986	Hagtvet, Knut A., Dr. philos.	The construct of test anxiety: Conceptual and methodological issues.
	Jellestad, Finn K., Dr. philos.	Effects of neuron specific amygdala lesions on fear-motivated behavior in rats.
1987	Aarø, Leif E., Dr. philos.	Health behaviour and sosioeconomic Status. A survey among the adult population in Norway.
	Underlid, Kjell, Dr. philos.	Arbeidsløyse i psykososialt perspektiv.
	Laberg, Jon C., Dr. philos.	Expectancy and classical conditioning in alcoholics' craving.
	Vollmer, Fred, Dr. philos.	Essays on explanation in psychology.
	Ellertsen, Bjørn, Dr. philos.	Migraine and tension headache: Psychophysiology, personality and therapy.
1988	Kaufmann, Astrid, Dr. philos.	Antisosial atferd hos ungdom. En studie av psykologiske determinanter.

	Mykletun, Reidar J., Dr. philos.	Teacher stress: personality, work-load and health.
	Havik, Odd E., Dr. philos.	After the myocardial infarction: A medical and psychological study with special emphasis on perceived illness.
1989	Bråten, Stein, Dr. philos.	Menneskedyaden. En teoretisk tese om sinnets dialogiske natur med informasjons- og utviklingspsykologiske implikasjoner sammenholdt med utvalgte spedbarnsstudier.
	Wold, Bente, Dr. psychol.	Lifestyles and physical activity. A theoretical and empirical analysis of socialization among children and adolescents.
1990	Flaten, Magne A., Dr. psychol.	The role of habituation and learning in reflex modification.
1991	Alsaker, Françoise D., Dr. philos.	Global negative self-evaluations in early adolescence.
	Kraft, Pål, Dr. philos.	AIDS prevention in Norway. Empirical studies on diffusion of knowledge, public opinion, and sexual behaviour.
	Endresen, Inger M., Dr. philos.	Psychoimmuniological stress markers in working life.
	Faleide, Asbjørn O., Dr. philos.	Asthma and allergy in childhood. Psychosocial and psychotherapeutic problems.
1992	Dalen, Knut, Dr. philos.	Hemispheric asymmetry and the Dual-Task Paradigm: An experimental approach.
	Bø, Inge B., Dr. philos.	Ungdoms sosiale økologi. En undersøkelse av 14-16 åringers sosiale nettverk.
	Nivison, Mary E., Dr. philos.	The relationship between noise as an experimental and environmental stressor, physiological changes and psychological factors.
	Torgersen, Anne M., Dr. philos.	Genetic and environmental influence on temperamental behaviour. A longitudinal study of twins from infancy to adolescence.
1993	Larsen, Svein, Dr. philos.	Cultural background and problem drinking.
	Nordhus, Inger Hilde, Dr. philos.	Family caregiving. A community psychological study with special emphasis on clinical interventions.
	Thuen, Frode, Dr. psychol.	Accident-related behaviour among children and young adolescents: Prediction and prevention.
	Solheim, Ragnar, Dr. philos.	Spesifikke lærevansker. Diskrepanskriteriet anvendt i seleksjonsmetodikk.
	Johnsen, Bjørn Helge, Dr. psychol.	Brain assymetry and facial emotional expressions: Conditioning experiments.
1994	Tønnessen, Finn E., Dr. philos.	The etiology of Dyslexia.
	Kvale, Gerd, Dr. psychol.	Psychological factors in anticipatory nausea and vomiting in cancer chemotherapy.
	Asbjørnsen, Arve E., Dr. psychol.	Structural and dynamic factors in dichotic listening: An interactional model.

	Bru, Edvin, Dr. philos.	The role of psychological factors in neck, shoulder and low back pain among female hospitale staff.
	Braathen, Eli T., Dr. psychol.	Prediction of exellence and discontinuation in different types of sport: The significance of motivation and EMG.
	Johannessen, Birte F., Dr. philos.	Det flytende kjønnet. Om lederskap, politikk og identitet.
1995	Sam, David L., Dr. psychol.	Acculturation of young immigrants in Norway: A psychological and socio-cultural adaptation.
	Bjaalid, Inger-Kristin, Dr. philos.	Component processes in word recognition.
	Martinsen, Øyvind, Dr. philos.	Cognitive style and insight.
	Nordby, Helge, Dr. philos.	Processing of auditory deviant events: Mismatch negativity of event-related brain potentials.
	Raaheim, Arild, Dr. philos.	Health perception and health behaviour, theoretical considerations, empirical studies, and practical implications.
	Seltzer, Wencke J., Dr. philos.	Studies of Psychocultural Approach to Families in Therapy.
	Brun, Wibecke, Dr. philos.	Subjective conceptions of uncertainty and risk.
	Aas, Henrik N., Dr. psychol.	Alcohol expectancies and socialization: Adolescents learning to drink.
	Bjørkly, Stål, Dr. psychol.	Diagnosis and prediction of intra-institutional aggressive behaviour in psychotic patients
1996	Anderssen, Norman, Dr. psychol.	Physical activity of young people in a health perspective: Stability, change and social influences.
	Sandal, Gro Mjeldheim, Dr. psychol.	Coping in extreme environments: The role of personality.
	Strumse, Einar, Dr. philos.	The psychology of aesthetics: explaining visual preferences for agrarian landscapes in Western Norway.
	Hestad, Knut, Dr. philos.	Neuropsychological deficits in HIV-1 infection.
	Lugoe, L.Wycliffe, Dr. philos.	Prediction of Tanzanian students' HIV risk and preventive behaviours
	Sandvik, B. Gunnhild, Dr. philos.	Fra distriktsjordmor til institusjonsjordmor. Fremveksten av en profesjon og en profesjonsutdanning
	Lie, Gro Therese, Dr. psychol.	The disease that dares not speak its name: Studies on factors of importance for coping with HIV/AIDS in Northern Tanzania
	Øygard, Lisbet, Dr. philos.	Health behaviors among young adults. A psychological and sociological approach
	Stormark, Kjell Morten, Dr. psychol.	Emotional modulation of selective attention: Experimental and clinical evidence.
	Einarsen, Ståle, Dr. psychol.	Bullying and harassment at work: epidemiological and psychosocial aspects.

1997	Knivsberg, Ann-Mari, Dr. philos.	Behavioural abnormalities and childhood psychopathology: Urinary peptide patterns as a potential tool in diagnosis and remediation.
	Eide, Arne H., Dr. philos.	Adolescent drug use in Zimbabwe. Cultural orientation in a global-local perspective and use of psychoactive substances among secondary school students.
	Sørensen, Marit, Dr. philos.	The psychology of initiating and maintaining exercise and diet behaviour.
	Skjæveland, Oddvar, Dr. psychol.	Relationships between spatial-physical neighborhood attributes and social relations among neighbors.
	Zewdie, Teka, Dr. philos.	Mother-child relational patterns in Ethiopia. Issues of developmental theories and intervention programs.
	Wilhelmsen, Britt Unni, Dr. philos.	Development and evaluation of two educational programmes designed to prevent alcohol use among adolescents.
	Manger, Terje, Dr. philos.	Gender differences in mathematical achievement among Norwegian elementary school students.
1998 V	Lindstrøm, Torill Christine, Dr. philos.	«Good Grief»: Adapting to Bereavement.
	Skogstad, Anders, Dr. philos.	Effects of leadership behaviour on job satisfaction, health and efficiency.
	Haldorsen, Ellen M. Håland, Dr. psychol.	Return to work in low back pain patients.
	Besemer, Susan P., Dr. philos.	Creative Product Analysis: The Search for a Valid Model for Understanding Creativity in Products.
H	Winje, Dagfinn, Dr. psychol.	Psychological adjustment after severe trauma. A longitudinal study of adults' and children's posttraumatic reactions and coping after the bus accident in Måbødalen, Norway 1988.
	Vosburg, Suzanne K., Dr. philos.	The effects of mood on creative problem solving.
	Eriksen, Hege R., Dr. philos.	Stress and coping: Does it really matter for subjective health complaints?
	Jakobsen, Reidar, Dr. psychol.	Empiriske studier av kunnskap og holdninger om hiv/aids og den normative seksuelle utvikling i ungdomsårene.
1999 V	Mikkelsen, Aslaug, Dr. philos.	Effects of learning opportunities and learning climate on occupational health.
	Samdal, Oddrun, Dr. philos.	The school environment as a risk or resource for students' health-related behaviours and subjective well-being.
	Friestad, Christine, Dr. philos.	Social psychological approaches to smoking.
	Ekeland, Tor-Johan, Dr. philos.	Meining som medisin. Ein analyse av placebofenomenet og implikasjoner for terapi og terapeutiske teoriar.
H	Saban, Sara, Dr. psychol.	Brain Asymmetry and Attention: Classical Conditioning Experiments.

	Carlsten, Carl Thomas, Dr. philos.	God lesing – God læring. En aksjonsrettet studie av undervisning i fagtekstlesing.
	Dundas, Ingrid, Dr. psychol.	Functional and dysfunctional closeness. Family interaction and children's adjustment.
	Engen, Liv, Dr. philos.	Kartlegging av leseferdighet på småskoletrinnet og vurdering av faktorer som kan være av betydning for optimal leseutvikling.
2000 V	Hovland, Ole Johan, Dr. philos.	Transforming a self-preserving "alarm" reaction into a self-defeating emotional response: Toward an integrative approach to anxiety as a human phenomenon.
	Lillejord, Sølvi, Dr. philos.	Handlingsrasjonalitet og spesialundervisning. En analyse av aktørperspektiver.
	Sandell, Ove, Dr. philos.	Den varme kunnskapen.
	Oftedal, Marit Petersen, Dr. philos.	Diagnostisering av ordavkodingsvansker: En prosessanalytisk tilnærmingsmåte.
H	Sandbak, Tone, Dr. psychol.	Alcohol consumption and preference in the rat: The significance of individual differences and relationships to stress pathology
	Eid, Jarle, Dr. psychol.	Early predictors of PTSD symptom reporting; The significance of contextual and individual factors.
2001 V	Skinstad, Anne Helene, Dr. philos.	Substance dependence and borderline personality disorders.
	Binder, Per-Einar, Dr. psychol.	Individet og den meningsbærende andre. En teoretisk undersøkelse av de mellommenneskelige forutsetningene for psykisk liv og utvikling med utgangspunkt i Donald Winnicotts teori.
	Roald, Ingvild K., Dr. philos.	Building of concepts. A study of Physics concepts of Norwegian deaf students.
H	Fekadu, Zelalem W., Dr. philos.	Predicting contraceptive use and intention among a sample of adolescent girls. An application of the theory of planned behaviour in Ethiopian context.
	Melesse, Fantu, Dr. philos.	The more intelligent and sensitive child (MISC) mediational intervention in an Ethiopian context: An evaluation study.
	Råheim, Målfrid, Dr. philos.	Kvinners kroppserfaring og livssammenheng. En fenomenologisk – hermeneutisk studie av friske kvinner og kvinner med kroniske muskelsmerter.
	Engelsen, Birthe Kari, Dr. psychol.	Measurement of the eating problem construct.
	Lau, Bjørn, Dr. philos.	Weight and eating concerns in adolescence.
2002 V	Ihlebæk, Camilla, Dr. philos.	Epidemiological studies of subjective health complaints.
	Rosén, Gunnar O. R., Dr. philos.	The phantom limb experience. Models for understanding and treatment of pain with hypnosis.

	Høines, Marit Johnsen, Dr. philos.	Fleksible språkrom. Matematikklæring som tekstutvikling.
	Anthun, Roald Andor, Dr. philos.	School psychology service quality. Consumer appraisal, quality dimensions, and collaborative improvement potential
	Pallesen, Ståle, Dr. psychol.	Insomnia in the elderly. Epidemiology, psychological characteristics and treatment.
	Midthassel, Unni Vere, Dr. philos.	Teacher involvement in school development activity. A study of teachers in Norwegian compulsory schools
	Kallestad, Jan Helge, Dr. philos.	Teachers, schools and implementation of the Olweus Bullying Prevention Program.
H	Ofte, Sonja Helgesen, Dr. psychol.	Right-left discrimination in adults and children.
	Netland, Marit, Dr. psychol.	Exposure to political violence. The need to estimate our estimations.
	Diseth, Åge, Dr. psychol.	Approaches to learning: Validity and prediction of academic performance.
	Bjuland, Raymond, Dr. philos.	Problem solving in geometry. Reasoning processes of student teachers working in small groups: A dialogical approach.
2003 V	Arefjord, Kjersti, Dr. psychol.	After the myocardial infarction – the wives' view. Short- and long-term adjustment in wives of myocardial infarction patients.
	Ingjaldsson, Jón Þorvaldur, Dr. psychol.	Unconscious Processes and Vagal Activity in Alcohol Dependency.
	Holden, Børge, Dr. philos.	Følger av atferdsanalytiske forklaringer for atferdsanalysens tilnærming til utforming av behandling.
	Holsen, Ingrid, Dr. philos.	Depressed mood from adolescence to 'emerging adulthood'. Course and longitudinal influences of body image and parent-adolescent relationship.
	Hammar, Åsa Karin, Dr. psychol.	Major depression and cognitive dysfunction- An experimental study of the cognitive effort hypothesis.
	Sprugevica, Ieva, Dr. philos.	The impact of enabling skills on early reading acquisition.
	Gabrielsen, Egil, Dr. philos.	LESE FOR LIVET. Lesekompetansen i den norske voksenbefolkningen sett i lys av visjonen om en enhetsskole.
H	Hansen, Anita Lill, Dr. psychol.	The influence of heart rate variability in the regulation of attentional and memory processes.
	Dyregrov, Kari, Dr. philos.	The loss of child by suicide, SIDS, and accidents: Consequences, needs and provisions of help.
2004 V	Torsheim, Torbjørn, Dr. psychol.	Student role strain and subjective health complaints: Individual, contextual, and longitudinal perspectives.
	Haugland, Bente Storm Mowatt Dr. psychol.	Parental alcohol abuse. Family functioning and child adjustment.

	Milde, Anne Marita, Dr. psychol.	Ulcerative colitis and the role of stress. Animal studies of psychobiological factors in relationship to experimentally induced colitis.
	Stornes, Tor, Dr. philos.	Socio-moral behaviour in sport. An investigation of perceptions of sportspersonship in handball related to important factors of socio-moral influence.
	Mæhle, Magne, Dr. philos.	Re-inventing the child in family therapy: An investigation of the relevance and applicability of theory and research in child development for family therapy involving children.
	Kobbeltvedt, Therese, Dr. psychol.	Risk and feelings: A field approach.
2004 H	Thomsen, Tormod, Dr. psychol.	Localization of attention in the brain.
	Løberg, Else-Marie, Dr. psychol.	Functional laterality and attention modulation in schizophrenia: Effects of clinical variables.
	Kyrkjebø, Jane Mikkelsen, Dr. philos.	Learning to improve: Integrating continuous quality improvement learning into nursing education.
	Laumann, Karin, Dr. psychol.	Restorative and stress-reducing effects of natural environments: Experiencal, behavioural and cardiovascular indices.
	Holgersen, Helge, PhD	Mellom oss - Essay i relasjonell psykoanalyse.
2005 V	Hetland, Hilde, Dr. psychol.	Leading to the extraordinary? Antecedents and outcomes of transformational leadership.
	Iversen, Anette Christine, Dr. philos.	Social differences in health behaviour: the motivational role of perceived control and coping.
2005 H	Mathisen, Gro Ellen, PhD	Climates for creativity and innovation: Definitions, measurement, predictors and consequences.
	Sævi, Tone, Dr. philos.	Seeing disability pedagogically – The lived experience of disability in the pedagogical encounter.
	Wiium, Nora, PhD	Intrapersonal factors, family and school norms: combined and interactive influence on adolescent smoking behaviour.
	Kanagaratnam, Pushpa, PhD	Subjective and objective correlates of Posttraumatic Stress in immigrants/refugees exposed to political violence.
	Larsen, Torill M. B. , PhD	Evaluating principals` and teachers` implementation of Second Step. A case study of four Norwegian primary schools.
	Bancila, Delia, PhD	Psychosocial stress and distress among Romanian adolescents and adults.
2006 V	Hillestad, Torgeir Martin, Dr. philos.	Normalitet og avvik. Forutsetninger for et objektivt psykopatologisk avviksbegrep. En psykologisk, sosial, erkjennelsesteoretisk og teorihistorisk framstilling.
	Nordanger, Dag Øystein, Dr. psychol.	Psychosocial discourses and responses to political violence in post-war Tigray, Ethiopia.

	Rimol, Lars Morten, PhD	Behavioral and fMRI studies of auditory laterality and speech sound processing.
	Krumsvik, Rune Johan, Dr. philos.	ICT in the school. ICT-initiated school development in lower secondary school.
	Norman, Elisabeth, Dr. psychol.	Gut feelings and unconscious thought: An exploration of fringe consiousness in implicit cognition.
	Israel, K Pravin, Dr. psychol.	Parent involvement in the mental health care of children and adolescents. Emperical studies from clinical care setting.
	Glasø, Lars, PhD	Affects and emotional regulation in leader-subordinate relationships.
	Knutsen, Ketil, Dr. philos.	HISTORIER UNGDOM LEVER – En studie av hvordan ungdommer bruker historie for å gjøre livet meningsfullt.
	Matthiesen, Stig Berge, PhD	Bullying at work. Antecedents and outcomes.
2006 H	Gramstad, Arne, PhD	Neuropsychological assessment of cognitive and emotional functioning in patients with epilepsy.
	Bendixen, Mons, PhD	Antisocial behaviour in early adolescence: Methodological and substantive issues.
	Mrumbi, Khalifa Maulid, PhD	Parental illness and loss to HIV/AIDS as experienced by AIDS orphans aged between 12-17 years from Temeke District, Dar es Salaam, Tanzania: A study of the children's psychosocial health and coping responses.
	Hetland, Jørn, Dr. psychol.	The nature of subjective health complaints in adolescence: Dimensionality, stability, and psychosocial predictors
	Kakoko, Deodatus Conatus Vitalis, PhD	Voluntary HIV counselling and testing service uptake among primary school teachers in Mwanza, Tanzania: assessment of socio-demographic, psychosocial and socio-cognitive aspects
	Mykletun, Arnstein, Dr. psychol.	Mortality and work-related disability as long-term consequences of anxiety and depression: Historical cohort designs based on the HUNT-2 study
	Sivertsen, Børge, PhD	Insomnia in older adults. Consequences, assessment and treatment.
2007 V	Singhammer, John, Dr. philos.	Social conditions from before birth to early adulthood – the influence on health and health behaviour
	Janvin, Carmen Ani Cristea, PhD	Cognitive impairment in patients with Parkinson's disease: profiles and implications for prognosis
	Braarud, Hanne Cecilie, Dr.psychol.	Infant regulation of distress: A longitudinal study of transactions between mothers and infants
	Tveito, Torill Helene, PhD	Sick Leave and Subjective Health Complaints
	Magnussen, Liv Heide, PhD	Returning disability pensioners with back pain to work

	Thuen, Elin Marie, Dr.philos.	Learning environment, students' coping styles and emotional and behavioural problems. A study of Norwegian secondary school students.
	Solberg, Ole Asbjørn, PhD	Peacekeeping warriors – A longitudinal study of Norwegian peacekeepers in Kosovo
2007 H	Søreide, Gunn Elisabeth, Dr.philos.	Narrative construction of teacher identity
	Svensen, Erling, PhD	WORK & HEALTH. Cognitive Activation Theory of Stress applied in an organisational setting.
	Øverland, Simon Nygaard, PhD	Mental health and impairment in disability benefits. Studies applying linkages between health surveys and administrative registries.
	Eichele, Tom, PhD	Electrophysiological and Hemodynamic Correlates of Expectancy in Target Processing
	Børhaug, Kjetil, Dr.philos.	Oppseding til demokrati. Ein studie av politisk oppseding i norsk skule.
	Eikeland, Thorleif, Dr.philos.	Om å vokse opp på barnehjem og på sykehus. En undersøkelse av barnehjemsbarns opplevelser på barnehjem sammenholdt med sanatoriebarns beskrivelse av langvarige sykehusopphold – og et forsøk på forklaring.
	Wadel, Carl Cato, Dr.philos.	Medarbeidersamhandling og medarbeiderledelse i en lagbasert organisasjon
	Vinje, Hege Forbech, PhD	Thriving despite adversity: Job engagement and self-care among community nurses
	Noort, Maurits van den, PhD	Working memory capacity and foreign language acquisition
2008 V	Breivik, Kyrre, Dr.psychol.	The Adjustment of Children and Adolescents in Different Post-Divorce Family Structures. A Norwegian Study of Risks and Mechanisms.
	Johnsen, Grethe E., PhD	Memory impairment in patients with posttraumatic stress disorder
	Sætrevik, Bjørn, PhD	Cognitive Control in Auditory Processing
	Carvalhosa, Susana Fonseca, PhD	Prevention of bullying in schools: an ecological model
2008 H	Brønnick, Kolbjørn Selvåg	Attentional dysfunction in dementia associated with Parkinson's disease.
	Posserud, Maj-Britt Rocio	Epidemiology of autism spectrum disorders
	Haug, Ellen	Multilevel correlates of physical activity in the school setting
	Skjerve, Arvid	Assessing mild dementia – a study of brief cognitive tests.

	Kjønniksen, Lise	The association between adolescent experiences in physical activity and leisure time physical activity in adulthood: a ten year longitudinal study
	Gundersen, Hilde	The effects of alcohol and expectancy on brain function
	Omvik, Siri	Insomnia – a night and day problem
2009 V	Molde, Helge	Pathological gambling: prevalence, mechanisms and treatment outcome.
	Foss, Else	Den omsorgsfulle væremåte. En studie av voksnes væremåte i forhold til barn i barnehagen.
	Westrheim, Kariane	Education in a Political Context: A study of Konwledge Processes and Learning Sites in the PKK.
	Wehling, Eike	Cognitive and olfactory changes in aging
	Wangberg, Silje C.	Internet based interventions to support health behaviours: The role of self-efficacy.
	Nielsen, Morten B.	Methodological issues in research on workplace bullying. Operationalisations, measurements and samples.
	Sandu, Anca Larisa	MRI measures of brain volume and cortical complexity in clinical groups and during development.
	Guribye, Eugene	Refugees and mental health interventions
	Sørensen, Lin	Emotional problems in inattentive children – effects on cognitive control functions.
	Tjomsland, Hege E.	Health promotion with teachers. Evaluation of the Norwegian Network of Health Promoting Schools: Quantitative and qualitative analyses of predisposing, reinforcing and enabling conditions related to teacher participation and program sustainability.
	Helleve, Ingrid	Productive interactions in ICT supported communities of learners
2009 H	Skorpen, Aina Øye, Christine	Dagliglivet i en psykiatrisk institusjon: En analyse av miljøterapeutiske praksiser
	Andreassen, Cecilie Schou	WORKAHOLISM – Antecedents and Outcomes
	Stang, Ingun	Being in the same boat: An empowerment intervention in breast cancer self-help groups
	Sequeira, Sarah Dorothee Dos Santos	The effects of background noise on asymmetrical speech perception
	Kleiven, Jo, dr.philos.	The Lillehammer scales: Measuring common motives for vacation and leisure behavior
	Jónsdóttir, Guðrún	Dubito ergo sum? Ni jenter møter naturfaglig kunnskap.
	Hove, Oddbjørn	Mental health disorders in adults with intellectual disabilities - Methods of assessment and prevalence of mental health disorders and problem behaviour
	Wageningen, Heidi Karin van	The role of glutamate on brain function

	Bjørkvik, Jofrid	God nok? Selvaktelse og interpersonlig fungering hos pasienter innen psykisk helsevern: Forholdet til diagnoser, symptomer og behandlingsutbytte
	Andersson, Martin	A study of attention control in children and elderly using a forced-attention dichotic listening paradigm
	Almås, Aslaug Grov	Teachers in the Digital Network Society: Visions and Realities. A study of teachers' experiences with the use of ICT in teaching and learning.
	Ulvik, Marit	Lærerutdanning som danning? Tre stemmer i diskusjonen
2010 V	Skår, Randi	Læringsprosesser i sykepleieres profesjonsutøvelse. En studie av sykepleieres læringserfaringer.
	Roald, Knut	Kvalitetsvurdering som organisasjonslæring mellom skole og skoleeigar
	Lunde, Linn-Heidi	Chronic pain in older adults. Consequences, assessment and treatment.
	Danielsen, Anne Grete	Perceived psychosocial support, students' self-reported academic initiative and perceived life satisfaction
	Hysing, Mari	Mental health in children with chronic illness
	Olsen, Olav Kjellevold	Are good leaders moral leaders? The relationship between effective military operational leadership and morals
	Riese, Hanne	Friendship and learning. Entrepreneurship education through mini-enterprises.
	Holthe, Asle	Evaluating the implementation of the Norwegian guidelines for healthy school meals: A case study involving three secondary schools
H	Hauge, Lars Johan	Environmental antecedents of workplace bullying: A multi-design approach
	Bjørkelo, Brita	Whistleblowing at work: Antecedents and consequences
	Reme, Silje Endresen	Common Complaints – Common Cure? Psychiatric comorbidity and predictors of treatment outcome in low back pain and irritable bowel syndrome
	Helland, Wenche Andersen	Communication difficulties in children identified with psychiatric problems
	Beneventi, Harald	Neuronal correlates of working memory in dyslexia
	Thygesen, Elin	Subjective health and coping in care-dependent old persons living at home
	Aanes, Mette Marthinussen	Poor social relationships as a threat to belongingness needs. Interpersonal stress and subjective health complaints: Mediating and moderating factors.
	Anker, Morten Gustav	Client directed outcome informed couple therapy

	Bull, Torill	Combining employment and child care: The subjective well-being of single women in Scandinavia and in Southern Europe
	Viig, Nina Grieg	Tilrettelegging for læreres deltakelse i helsefremmende arbeid. En kvalitativ og kvantitativ analyse av sammenhengen mellom organisatoriske forhold og læreres deltakelse i utvikling og implementering av Europeisk Nettverk av Helsefremmende Skoler i Norge
	Wolff, Katharina	To know or not to know? Attitudes towards receiving genetic information among patients and the general public.
	Ogden, Terje, dr.philos.	Familiebasert behandling av alvorlige atferdsproblemer blant barn og ungdom. Evaluering og implementering av evidensbaserte behandlingsprogrammer i Norge.
	Solberg, Mona Elin	Self-reported bullying and victimisation at school: Prevalence, overlap and psychosocial adjustment.
2011 V	Bye, Hege Høivik	Self-presentation in job interviews. Individual and cultural differences in applicant self-presentation during job interviews and hiring managers' evaluation
	Notelaers, Guy	Workplace bullying. A risk control perspective.
	Moltu, Christian	Being a therapist in difficult therapeutic impasses. A hermeneutic phenomenological analysis of skilled psychotherapists' experiences, needs, and strategies in difficult therapies ending well.
	Myrseth, Helga	Pathological Gambling - Treatment and Personality Factors
	Schanche, Elisabeth	From self-criticism to self-compassion. An empirical investigation of hypothesized change prosesses in the Affect Phobia Treatment Model of short-term dynamic psychotherapy for patients with Cluster C personality disorders.
	Våpenstad, Eystein Victor, dr.philos.	Det tempererte nærvær. En teoretisk undersøkelse av psykoterapautens subjektivitet i psykoanalyse og psykoanalytisk psykoterapi.
	Haukebø, Kristin	Cognitive, behavioral and neural correlates of dental and intra-oral injection phobia. Results from one treatment and one fMRI study of randomized, controlled design.
	Harris, Anette	Adaptation and health in extreme and isolated environments. From 78°N to 75°S.
	Bjørknes, Ragnhild	Parent Management Training-Oregon Model: intervention effects on maternal practice and child behavior in ethnic minority families
	Mamen, Asgeir	Aspects of using physical training in patients with substance dependence and additional mental distress
	Espevik, Roar	Expert teams: Do shared mental models of team members make a difference
	Haara, Frode Olav	Unveiling teachers' reasons for choosing practical activities in mathematics teaching

2011 H	Hauge, Hans Abraham	How can employee empowerment be made conducive to both employee health and organisation performance? An empirical investigation of a tailor-made approach to organisation learning in a municipal public service organisation.
	Melkevik, Ole Rogstad	Screen-based sedentary behaviours: pastimes for the poor, inactive and overweight? A cross-national survey of children and adolescents in 39 countries.
	Vøllestad, Jon	Mindfulness-based treatment for anxiety disorders. A quantitative review of the evidence, results from a randomized controlled trial, and a qualitative exploration of patient experiences.
	Tolo, Astrid	Hvordan blir lærerkompetanse konstruert? En kvalitativ studie av PPU-studenters kunnskapsutvikling.
	Saus, Evelyn-Rose	Training effectiveness: Situation awareness training in simulators
	Nordgreen, Tine	Internet-based self-help for social anxiety disorder and panic disorder. Factors associated with effect and use of self-help.
	Munkvold, Linda Helen	Oppositional Defiant Disorder: Informant discrepancies, gender differences, co-occuring mental health problems and neurocognitive function.
	Christiansen, Øivin	Når barn plasseres utenfor hjemmet: beslutninger, forløp og relasjoner. Under barnevernets (ved)tak.
	Brunborg, Geir Scott	Conditionability and Reinforcement Sensitivity in Gambling Behaviour
	Hystad, Sigurd William	Measuring Psychological Resiliency: Validation of an Adapted Norwegian Hardiness Scale
2012 V	Roness, Dag	Hvorfor bli lærer? Motivasjon for utdanning og utøving.
	Fjermestad, Krister Westlye	The therapeutic alliance in cognitive behavioural therapy for youth anxiety disorders
	Jenssen, Eirik Sørnes	Tilpasset opplæring i norsk skole: politikeres, skoleledereres og læreres handlingsvalg
	Saksvik-Lehouillier, Ingvild	Shift work tolerance and adaptation to shift work among offshore workers and nurses
	Johansen, Venke Frederike	Når det intime blir offentlig. Om kvinners åpenhet om brystkreft og om markedsføring av brystkreftsaken.
	Herheim, Rune	Pupils collaborating in pairs at a computer in mathematics learning: investigating verbal communication patterns and qualities
	Vie, Tina Løkke	Cognitive appraisal, emotions and subjective health complaints among victims of workplace bullying: A stress-theoretical approach
	Jones, Lise Øen	Effects of reading skills, spelling skills and accompanying efficacy beliefs on participation in education. A study in Norwegian prisons.

2012 H	Danielsen, Yngvild Sørebø	Childhood obesity – characteristics and treatment. Psychological perspectives.
	Horverak, Jøri Gytre	Sense or sensibility in hiring processes. Interviewee and interviewer characteristics as antecedents of immigrant applicants' employment probabilities. An experimental approach.
	Jøsendal, Ola	Development and evaluation of BE smokeFREE, a school-based smoking prevention program
	Osnes, Berge	Temporal and Posterior Frontal Involvement in Auditory Speech Perception
	Drageset, Sigrunn	Psychological distress, coping and social support in the diagnostic and preoperative phase of breast cancer
	Aasland, Merethe Schanke	Destructive leadership: Conceptualization, measurement, prevalence and outcomes
	Bakibinga, Pauline	The experience of job engagement and self-care among Ugandan nurses and midwives
	Skogen, Jens Christoffer	Foetal and early origins of old age health. Linkage between birth records and the old age cohort of the Hordaland Health Study (HUSK)
	Leversen, Ingrid	Adolescents' leisure activity participation and their life satisfaction: The role of demographic characteristics and psychological processes
	Hanss, Daniel	Explaining sustainable consumption: Findings from cross-sectional and intervention approaches
	Rød, Per Arne	Barn i klem mellom foreldrekonflikter og samfunnsmessig beskyttelse
2013 V	Mentzoni, Rune Aune	Structural Characteristics in Gambling
	Knudsen, Ann Kristin	Long-term sickness absence and disability pension award as consequences of common mental disorders. Epidemiological studies using a population-based health survey and official ill health benefit registries.
	Strand, Mari	Emotional information processing in recurrent MDD
	Veseth, Marius	Recovery in bipolar disorder. A reflexive-collaborative exploration of the lived experiences of healing and growth when battling a severe mental illness
	Mæland, Silje	Sick leave for patients with severe subjective health complaints. Challenges in general practice.
	Mjaaland, Thera	At the frontiers of change? Women and girls' pursuit of education in north-western Tigray, Ethiopia
	Odéen, Magnus	Coping at work. The role of knowledge and coping expectancies in health and sick leave.
	Hynninen, Kia Minna Johanna	Anxiety, depression and sleep disturbance in chronic obstructive pulmonary disease (COPD). Associations, prevalence and effect of psychological treatment.
	Flo, Elisabeth	Sleep and health in shift working nurses

	Aasen, Elin Margrethe	From paternalism to patient participation? The older patients undergoing hemodialysis, their next of kin and the nurses: a discursive perspective on perception of patient participation in dialysis units
	Ekornås, Belinda	Emotional and Behavioural Problems in Children: Self-perception, peer relationships, and motor abilities
	Corbin, J. Hope	North-South Partnerships for Health: Key Factors for Partnership Success from the Perspective of the KIWAKKUKI
	Birkeland, Marianne Skogbrott	Development of global self-esteem: The transition from adolescence to adulthood
2013 H	Gianella-Malca, Camila	Challenges in Implementing the Colombian Constitutional Court's Health-Care System Ruling of 2008
	Hovland, Anders	Panic disorder – Treatment outcomes and psychophysiological concomitants
	Mortensen, Øystein	The transition to parenthood – Couple relationships put to the test
	Årdal, Guro	Major Depressive Disorder – a Ten Year Follow-up Study. Inhibition, Information Processing and Health Related Quality of Life
	Johansen, Rino Bandlitz	The impact of military identity on performance in the Norwegian armed forces
	Bøe, Tormod	Socioeconomic Status and Mental Health in Children and Adolescents
2014 V	Nordmo, Ivar	Gjennom nåløyet – studenters læringserfaringer i psykologutdanningen
	Dovran, Anders	Childhood Trauma and Mental Health Problems in Adult Life
	Hegelstad, Wenche ten Velden	Early Detection and Intervention in Psychosis: A Long-Term Perspective
	Urheim, Ragnar	Forståelse av pasientaggresjon og forklaringer på nedgang i voldsrate ved Regional sikkerhetsavdeling, Sandviken sykehus
	Kinn, Liv Grethe	Round-Trips to Work. Qualitative studies of how persons with severe mental illness experience work integration.
	Rød, Anne Marie Kinn	Consequences of social defeat stress for behaviour and sleep. Short-term and long-term assessments in rats.
	Nygård, Merethe	Schizophrenia – Cognitive Function, Brain Abnormalities, and Cannabis Use
	Tjora, Tore	Smoking from adolescence through adulthood: the role of family, friends, depression and socioeconomic status. Predictors of smoking from age 13 to 30 in the "The Norwegian Longitudinal Health Behaviour Study" (NLHB)
	Vangsnes, Vigdis	The Dramaturgy and Didactics of Computer Gaming. A Study of a Medium in the Educational Context of Kindergartens.

	Nordahl, Kristin Berg	Early Father-Child Interaction in a Father-Friendly Context: Gender Differences, Child Outcomes, and Protective Factors related to Fathers' Parenting Behaviors with One-year-olds
2014 H	Sandvik, Asle Makoto	Psychopathy – the heterogenety of the construct
	Skotheim, Siv	Maternal emotional distress and early mother-infant interaction: Psychological, social and nutritional contributions
	Halleland, Helene Barone	Executive Functioning in adult Attention Deficit Hyperactivity Disorder (ADHD). From basic mechanisms to functional outcome.
	Halvorsen, Kirsti Vindal	Partnerskap i lærerutdanning, sett fra et økologisk perspektiv
	Solbue, Vibeke	Dialogen som visker ut kategorier. En studie av hvilke erfaringer innvandrerungdommer og norskfødte med innvandrerforeldre har med videregående skole. Hva forteller ungdommenes erfaringer om videregående skoles håndtering av etniske ulikheter?
	Kvalevaag, Anne Lise	Fathers' mental health and child development. The predictive value of fathers' psychological distress during pregnancy for the social, emotional and behavioural development of their children
	Sandal, Ann Karin	Ungdom og utdanningsval. Om elevar sine opplevingar av val og overgangsprosessar.
	Haug, Thomas	Predictors and moderators of treatment outcome from high- and low-intensity cognitive behavioral therapy for anxiety disorders. Association between patient and process factors, and the outcome from guided self-help, stepped care, and face-to-face cognitive behavioral therapy.
	Sjølie, Hege	Experiences of Members of a Crisis Resolution Home Treatment Team. Personal history, professional role and emotional support in a CRHT team.
	Falkenberg, Liv Eggset	Neuronal underpinnings of healthy and dysfunctional cognitive control
	Mrdalj, Jelena	The early life condition. Importance for sleep, circadian rhythmicity, behaviour and response to later life challenges
	Hesjedal, Elisabeth	Tverrprofesjonelt samarbeid mellom skule og barnevern: Kva kan støtte utsette barn og unge?
2015 V	Hauken, May Aasebø	«*The cancer treatment was only half the work!»* A Mixed-Method Study of Rehabilitation among Young Adult Cancer Survivors
	Ryland, Hilde Katrin	Social functioning and mental health in children: the influence of chronic illness and intellectual function
	Rønsen, Anne Kristin	Vurdering som profesjonskompetanse. Refleksjonsbasert utvikling av læreres kompetanse i formativ vurdering

	Hoff, Helge Andreas	Thinking about Symptoms of Psychopathy in Norway: Content Validation of the Comprehensive Assessment of Psychopathic Personality (CAPP) Model in a Norwegian Setting
	Schmid, Marit Therese	Executive Functioning in recurrent- and first episode Major Depressive Disorder. Longitudinal studies
	Sand, Liv	Body Image Distortion and Eating Disturbances in Children and Adolescents
	Matanda, Dennis Juma	Child physical growth and care practices in Kenya: Evidence from Demographic and Health Surveys
	Amugsi, Dickson Abanimi	Child care practices, resources for care, and nutritional outcomes in Ghana: Findings from Demographic and Health Surveys
	Jakobsen, Hilde	The good beating: Social norms supporting men's partner violence in Tanzania
	Sagoe, Dominic	Nonmedical anabolic-androgenic steroid use: Prevalence, attitudes, and social perception
	Eide, Helene Marie Kjærgård	Narrating the relationship between leadership and learning outcomes. A study of public narratives in the Norwegian educational sector.
2015 H	Wubs, Annegreet Gera	Intimate partner violence among adolescents in South Africa and Tanzania
	Hjelmervik, Helene Susanne	Sex and sex-hormonal effects on brain organization of fronto-parietal networks
	Dahl, Berit Misund	The meaning of professional identity in public health nursing
	Røykenes, Kari	Testangst hos sykepleierstudenter: «Alternativ behandling»
	Bless, Josef Johann	The smartphone as a research tool in psychology. Assessment of language lateralization and training of auditory attention.
	Løvvik, Camilla Margrethe Sigvaldsen	Common mental disorders and work participation – the role of return-to-work expectations
	Lehmann, Stine	Mental Disorders in Foster Children: A Study of Prevalence, Comorbidity, and Risk Factors
	Knapstad, Marit	Psychological factors in long-term sickness absence: the role of shame and social support. Epidemiological studies based on the Health Assets Project.
2016 V	Kvestad, Ingrid	Biological risks and neurodevelopment in young North Indian children
	Sælør, Knut Tore	Hinderløyper, halmstrå og hengende snører. En kvalitativ studie av håp innenfor psykisk helse- og rusfeltet.
	Mellingen, Sonja	Alkoholbruk, partilfredshet og samlivsstatus. Før, inn i, og etter svangerskapet – korrelater eller konsekvenser?
	Thun, Eirunn	Shift work: negative consequences and protective factors

	Hilt, Line Torbjørnsen	The borderlands of educational inclusion. Analyses of inclusion and exclusion processes for minority language students
	Havnen, Audun	Treatment of obsessive-compulsive disorder and the importance of assessing clinical effectiveness
	Slåtten, Hilde	Gay-related name-calling among young adolescents. Exploring the importance of the context.
	Ree, Eline	Staying at work. The role of expectancies and beliefs in health and workplace interventions.
	Morken, Frøydis	Reading and writing processing in dyslexia
2016 H	Løvoll, Helga Synnevåg	Inside the outdoor experience. On the distinction between pleasant and interesting feelings and their implication in the motivational process.
	Hjeltnes, Aslak	Facing social fears: An investigation of mindfulness-based stress reduction for young adults with social anxiety disorder
	Øyeflaten, Irene Larsen	Long-term sick leave and work rehabilitation. Prognostic factors for return to work.
	Henriksen, Roger Ekeberg	Social relationships, stress and infection risk in mother and child
	Johnsen, Iren	«Only a friend» - The bereavement process of young adults who have lost a friend to a traumatic death. A mixed methods study.
	Helle, Siri	Cannabis use in non-affective psychoses: Relationship to age at onset, cognitive functioning and social cognition
	Glambek, Mats	Workplace bullying and expulsion in working life. A representative study addressing prospective associations and explanatory conditions.
	Oanes, Camilla Jensen	Tilbakemelding i terapi. På hvilke måter opplever terapeuter at tilbakemeldingsprosedyrer kan virke inn på terapeutiske praksiser?
	Reknes, Iselin	Exposure to workplace bullying among nurses: Health outcomes and individual coping
	Chimhutu, Victor	Results-Based Financing (RBF) in the health sector of a low-income country. From agenda setting to implementation: The case of Tanzania
	Ness, Ingunn Johanne	The Room of Opportunity. Understanding how knowledge and ideas are constructed in multidisciplinary groups working with developing innovative ideas.
	Hollekim, Ragnhild	Contemporary discourses on children and parenting in Norway. An empirical study based on two cases.
	Doran, Rouven	Eco-friendly travelling: The relevance of perceived norms and social comparison
2017 V	Katisi, Masego	The power of context in health partnerships: Exploring synergy and antagony between external and internal ideologies in implementing Safe Male Circumcision (SMC) for HIV prevention in Botswana

	Jamaludin, Nor Lelawati Binti	The “why” and “how” of International Students’ Ambassadorship Roles in International Education
	Berthelsen, Mona	Effects of shift work and psychological and social work factors on mental distress. Studies of onshore/offshore workers and nurses in Norway.
	Krane, Vibeke	Lærer-elev-relasjoner, elevers psykiske helse og frafall i videregående skole – en eksplorerende studie om samarbeid og den store betydningen av de små ting
	Søvik, Margaret Ljosnes	Evaluating the implementation of the Empowering Coaching™ program in Norway
	Tonheim, Milfrid	A troublesome transition: Social reintegration of girl soldiers returning ‘home’
	Senneseth, Mette	Improving social network support for partners facing spousal cancer while caring for minors. A randomized controlled trial.
	Urke, Helga Bjørnøy	Child health and child care of very young children in Bolivia, Colombia and Peru.
	Bakhturidze, George	Public Participation in Tobacco Control Policy-making in Georgia
	Fismen, Anne-Siri	Adolescent eating habits. Trends and socio-economic status.
2017 H	Hagatun, Susanne	Internet-based cognitive-behavioural therapy for insomnia. A randomised controlled trial in Norway.
	Eichele, Heike	Electrophysiological Correlates of Performance Monitoring in Children with Tourette Syndrome. A developmental perspective.
	Risan, Ulf Patrick	Accommodating trauma in police interviews. An exploration of rapport in investigative interviews of traumatized victims.
	Sandhåland, Hilde	Safety on board offshore vessels: A study of shipboard factors and situation awareness
	Blågestad, Tone Fidje	Less pain – better sleep and mood? Interrelatedness of pain, sleep and mood in total hip arthroplasty patients
	Kronstad, Morten	Frå skulebenk til deadlines. Korleis nettjournalistar og journaliststudentar lærer, og korleis dei utviklar journalistfagleg kunnskap
	Vedaa, Øystein	Shift work: The importance of sufficient time for rest between shifts.
	Steine, Iris Mulders	Predictors of symptoms outcomes among adult survivors of sexual abuse: The role of abuse characteristics, cumulative childhood maltreatment, genetic variants, and perceived social support.
	Høgheim, Sigve	Making math interesting: An experimental study of interventions to encourage interest in mathematics

2018 V	Brevik, Erlend Joramo	Adult Attention Deficit Hyperactivity Disorder. Beyond the Core Symptoms of the Diagnostic and Statistical Manual of Mental Disorders.
	Erevik, Eilin Kristine	User-generated alcohol-related content on social media: Determinants and relation to offline alcohol use
	Hagen, Egon	Cognitive and psychological functioning in patients with substance use disorder; from initial assessment to one-year recovery
	Adólfsdóttir, Steinunn	Subcomponents of executive functions: Effects of age and brain maturations
	Brattabø, Ingfrid Vaksdal	Detection of child maltreatment, the role of dental health personnel – A national cross-sectional study among public dental health personnel in Norway
	Fylkesnes, Marte Knag	Frykt, forhandlinger og deltakelse. Ungdommer og foreldre med etnisk minoritetsbakgrunn i møte med den norske barnevernstjenesten.
	Stiegler, Jan Reidar	Processing emotions in emotion-focused therapy. Exploring the impact of the two-chair dialogue intervention.
	Egelandsdal, Kjetil	Clickers and Formative Feedback at University Lectures. Exploring students and teachers' reception and use of feedback from clicker interventions.
	Torjussen, Lars Petter Storm	Foreningen av visdom og veltalenhet – utkast til en universitetsdidaktikk gjennom en kritikk og videreføring av Skjervheims pedagogiske filosofi på bakgrunn av Arendt og Foucault. *Eller hvorfor menneskelivet er mer som å spille fløyte enn å bygge et hus.*
	Selvik, Sabreen	A childhood at refuges. Children with multiple relocations at refuges for abused women.
2018 H	Leino, Tony Mathias	Structural game characteristics, game features, financial outcomes and gambling behaviour
	Raknes, Solfrid	Anxious Adolescents: Prevalence, Correlates, and Preventive Cogntive Behavioural Interventions
	Morken, Katharina Teresa Enehaug	Mentalization-based treatment of female patients with severe personality disorder and substance use disorder
	Braatveit, Kirsten Johanne	Intellectual disability among in-patients with substance use disorders
	Barua, Padmaja	Unequal Interdependencies: Exploring Power and Agency in Domestic Work Relations in Contemporary India
	Darkwah, Ernest	Caring for "parentless" children. An exploration of work-related experiences of caregivers in children's homes in Ghana.
	Valdersnes, Kjersti Bergheim	Safety Climate perceptions in High Reliability Organizations – the role of Psychological Capital

2019 V	Kongsgården, Petter	Vurderingspraksiser i teknologirike læringsmiljøer. En undersøkelse av læreres vurderingspraksiser i teknologirike læringsmiljøer og implikasjoner på elevenes medvirkning i egen læringsprosess.
	Vikene, Kjetil	Complexity in Rhythm and Parkinson's disease: Cognitive and Neuronal Correlates
	Heradstveit, Ove	Alcohol- and drug use among adolescents. School-related problems, childhood mental health problems, and psychiatric diagnoses.
	Riise, Eili Nygard	Concentrated exposure and response prevention for obsessive-compulsive disorder in adolescents: the Bergen 4-day treatment
	Vik, Alexandra	Imaging the Aging Brain: From Morphometry to Functional Connectivity
	Krossbakken, Elfrid	Personal and Contextual Factors Influencing Gaming Behaviour. Risk Factors and Prevention of Video Game Addiction.
	Solholm, Roar	Foreldrenes status og rolle i familie- og nærmiljøbaserte intervensjoner for barn med atferdsvansker
	Baldomir, Andrea Margarita	Children at Risk and Mothering Networks in Buenos Aires, Argentina: Analyses of Socialization and Law-Abiding Practices in Public Early Childhood Intervention.
	Samuelsson, Martin Per	Education for Deliberative Democracy. Theoretical assumptions and classroom practices.
	Visted, Endre	Emotion regulation difficulties. The role in onset, maintenance and recurrence of major depressive disorder.
2019 H	Nordmo, Morten	Sleep and naval performance. The impact of personality and leadership.
	Sveinsdottir, Vigdis	Supported Employment and preventing Early Disability (SEED)
	Dwyer, Gerard Eric	New approaches to the use of magnetic resonance spectroscopy for investigating the pathophysiology of auditory-verbal hallucinations
	Synnevåg, Ellen Strøm	Planning for Public Health. Balancing top-down and bottom-up approaches in Norwegian municipalities.
	Kvinge, Øystein Røsseland	Presentation in teacher education. A study of student teachers' transformation and representation of subject content using semiotic technology.
	Thorsen, Anders Lillevik	The emotional brain in obsessive-compulsive disorder
	Eldal, Kari	Sikkerheitsnettet som tek imot om eg fell – men som også kan fange meg. Korleis erfarer menneske med psykiske lidingar ei innlegging i psykisk helsevern? Eit samarbeidsbasert forskingsprosjekt mellom forskarar og brukarar.

	Svendsen, Julie Lillebostad	Self-compassion - Relationship with mindfulness, emotional stress symptoms and psychophysiological flexibility
2020 V	Albæk, Ane Ugland	Walking children through a minefield. Qualitative studies of professionals' experiences addressing abuse in child interviews.
	Ludvigsen, Kristine	Creating Spaces for Formative Feedback in Lectures. Understanding how use of educational technology can support formative assessment in lectures in higher education.
	Hansen, Hege	Tidlig intervensjon og recoveryprosesser ved førsteepisode psykose. En kvalitativ utforsking av ulike perspektiver.
	Nilsen, Sondre Aasen	After the Divorce: Academic Achievement, Mental Health, and Health Complaints in Adolescence. Heterogeneous associations by parental education, family structure, and siblings.
	Hovland, Runar Tengel	Kliniske tilbakemeldingssystemer i psykisk helsevern – implementering og praktisering
	Sæverot, Ane Malene	Bilde og pedagogikk. En empirisk undersøkelse av ungdoms fortellinger om bilder.
	Carlsen, Siv-Elin Leirvåg	Opioid maintenance treatment and social aspects of quality of life for first-time enrolled patients. A quantitative study.
	Haugen, Lill Susann Ynnesdal	Meeting places in Norwegian community mental health care: A participatory and community psychological inquiry
2020 H	Markova, Valeria	How do immigrants in Norway interpret, view, and prefer to cope with symptoms of depression? A mixed method study
	Anda-Ågotnes, Liss Gøril	Cognitive change in psychosis
	Finserås, Turi Reiten	Assessment, reward characteristics and parental mediation of Internet Gaming Disorder
	Hagen, Susanne	«Helse i alt kommunen gjør? ...» - *en undersøkelse av samvariasjoner mellom kommunale faktorer og norske kommuners bruk av folkehelsekoordinator, fokus på levekår og prioritering av fordelingshensyn blant sosioøkonomiske grupper.*
	Rajalingam, Dhaksshaginy	The impact of workplace bullying and repeated social defeat on health complaints and behavioral outcomes: A biopsychosocial perspective
	Potrebny, Thomas	Temporal trends in psychological distress and healthcare utilization among young people
2021 V	Hjetland, Gunnhild Johnsen	The effect of bright light on sleep in nursing home patients with dementia
	Marquardt, Lynn Anne	tDCS as treatment in neuro-psychiatric disorders. The underlying neuronal mechanisms of tDCS treatment of auditory verbal hallucinations.

	Sunde, Erlend	Effects of light interventions for adaptation to night work: Simulated night work experiments
	Kusztrits, Isabella	About psychotic-like experiences and auditory verbal hallucinations. Transdiagnostic investigations of neurobiological, cognitive, and emotional aspects of a continuous phenomenon.
	Halvorsen, Øyvind Wiik	Aktørskap hjå norsklærarar i vidaregåande skule – Ein sosiokulturell intervjustudie
	Fyhn, Tonje	Barriers and facilitators to increasing work participation among people with moderate to severe mental illness
	Marti, Andrea Rørvik	Shift work, circadian rhythms, and the brain. Identifying biological mechanisms underlying the metabolic and cognitive consequences of work timing, using a rat model.
	Thomassen, Ådne Gabriel	Hardiness and mental health in military organizations. Exploring mechanism and boundary conditions.
	Husabø, Elisabeth Bakke	Implementation of indicated anxiety prevention in schools
	Hagatun, Kari	The Educational Situation for Roma Pupils in Norway. Silenced Narratives on Schooling and Future.
	Herrero-Arias, Raquel	Negotiating parenting culture, identity, and belonging. The experiences of Southern European parents raising their children in Norway.
	Moltudal, Synnøve	Purposeful Actions in Leadership of Learning Processes: A Mixed Methods Study of Classroom Management in Digital Learning Environments
2021 H	Johnsen, Anja	Barn og unge i fattige familier: Selvoppfattet skolekompetanse, etnisitet og akademisk resiliens. Hvilke faktorer kan fremme skoleprestasjoner hos barn og unge i risiko?
	Eilertsen, Silje Elisabeth Hasmo	Who profits from concentrated exposure treatment for obsessive-compulsive disorder (OCD)? A quality assurance project from the OCD-team in Bergen.
	Chegeni, Razieh	Anabolic-Androgenic Steroids and Aggression in Humans: Experimental Studies, Subgroups, and Longitudinal Risk
	Solstad, Stig Magne	Patients' experiences with routine outcome monitoring and clinical feedback systems in psychotherapy
	Oldeide, Olin Blaalid	Local drug prevention - From policy to practice: A qualitative case study of policy makers, outreach social workers and at-risk youths
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	Tsogli, Barbara	When predictions about the "what", "where" and "when" interact with statistical learning, from a behavioural and neural perspective.

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