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

Thomas Haug

Dissertation for the degree philosiphiae doctor (PhD) at the University of Bergen

2014

© Copyright Thomas Haug

The material in this publication is protected by copyright law.

Print: AIT OSLO AS / University of Bergen

Scientific environment

The professional milieu involved in this thesis was the Anxiety Disorders Research Network, Haukeland University Hospital and The Bergen Group of Treatment Research, Department of Clinical Psychology, University of Bergen, Norway.

This PhD project is a part of the adult part of the research project “Assessment and Treatment -Anxiety in Children and Adults. Adult part” (ATACA) and has received support from the Western Norway Regional Health Authority, through project no. 911366 and project no. 911253

Table of contents

ACKNOWLEDGEMENTS 1

LIST OF PAPERS 3

ABSTRACT 4

SAMMENDRAG (ABSTRACT IN NORWEGIAN) 7

ABBREVIATIONS 10

1. INTRODUCTION 13

1.1. ANXIETY DISORDERS 15

1.1.1. PANIC DISORDER 16

1.1.2. SOCIAL ANXIETY DISORDER 18

1.2. COGNITIVE BEHAVIORAL THERAPY (CBT) 19

1.2.1. CBT FOR PANIC DISORDER 21

1.2.2. CBT FOR SOCIAL ANXIETY DISORDER 22

1.3. LOW INTENSITY CBT 24

1.3.1. PSYCHOEDUCATION 25

1.3.2. SELF-HELP TREATMENT 26

1.3.2.1. SELF-HELP COMPARED WITH FACE-TO-FACE TREATMENT 27

1.4. ORGANIZATION OF SERVICES: STEPPED CARE TREATMENT 28

1.5. PREDICTORS AND MODERATORS OF TREATMENT OUTCOME 29

1.5.1. STRUCTURAL FACTORS AS PREDICTORS OF TREATMENT OUTCOME 30

1.5.1.1. SELF-HELP TREATMENT FORMAT 30

1.5.1.2. THERAPIST CONTACT: GUIDED VERSUS NON-GUIDED SELF-HELP 31

1.5.1.3. CLINICAL VERSUS COMMUNITY SETTINGS 32

1.5.2. "WHAT WORKS FOR WHOM?" PATIENT CHARACTERISTICS AS PREDICTORS AND MODERATORS 32

1.5.2.1. DEMOGRAPHICS, SOCIAL FUNCTIONING AND SEVERITY 33

1.5.2.2. COMORBIDITY 34

1.5.2.3. PATIENT CHARACTERISTICS AS MODERATORS OF TREATMENT OUTCOME FROM SELF-HELP TREATMENT 36

1.5.3. FACTORS ASSOCIATED WITH THE THERAPY PROCESS 36

1.5.3.1. THE WORKING ALLIANCE 37

1.5.3.2. THERAPIST COMPETENCE 38

1.6. RESEARCH AIMS 39

2. METHODS AND RESULTS 40

2.1. THE RESEARCH PROJECT "ASSESSMENT AND TREATMENT- ANXIETY IN CHILDREN AND ADULTS" (ATACA) 40

2.1.1. PROCEDURE AND METHODS 41

2.1.1.1. RANDOMIZATION 41

2.1.1.2. ASSESSMENT 41

2.1.1.3. TREATMENT 42

2.1.1.4. TREATMENT INTEGRITY 43

2.1.1.5. OUTCOME ASSESSMENT 44

2.1.1.6. BASELINE PREDICTORS 44

2.1.1.7. WORKING ALLIANCE 45

2.1.1.8. THERAPIST COMPETENCE 45

2.1.2. STATISTICAL ANALYSES 45

2.1.3. SUMMARY OF THE OUTCOME FROM THE ATACA STUDY 46

FIGURE 1 CONSORT FOR THE ATACA STUDY 47

TABLE 1 DESCRIPTIVE STATISTICS FOR THE OUTCOME MEASURES 48

TABLE 2 DESCRIPTIVE STATISTICS FOR THE PROCESS MEASURES 49

TABLE 3 DESCRIPTIVE STATISTICS FOR THE PREDICTOR VARIABLES 50

TABLE 4 TIME-POINTS FOR ASSESSMENTS IN THE ATACA STUDY 51

2.2. PAPER I 52

2.2.1. RESEARCH AIMS 52

2.2.2. PROCEDURES AND METHODS 52

2.2.3. STATISTICAL ANALYSES 52

2.2.4. SUMMARY OF THE RESULTS 53

2.3. PAPER II 54

2.3.1. RESEARCH AIMS 54

2.3.2. PROCEDURE 54

2.3.2.1. OUTCOME ASSESSMENT 54

2.3.2.2. PREDICTORS AND MODERATORS 54

2.3.3. STATISTICAL ANALYSES 54

2.3.4. SUMMARY OF THE RESULTS 55

2.3.4.1. PREDICTORS 55

2.3.4.2. MODERATORS 55

2.3.4.3. ANALYSES INCLUDING ALL PREDICTORS 56

2.4. PAPER III 56

2.4.1. RESEARCH AIMS 56

2.4.2. PROCEDURE AND METHODS 56

2.4.2.1. OUTCOME MEASURES 57

2.4.2.2. PREDICTORS 57

2.4.3. STATISTICAL ANALYSES 57

2.4.4. SUMMARY OF THE RESULTS 58

3. DISCUSSION 58

3.1. EFFECT OF SELF-HELP TREATMENT FOR ANXIETY DISORDERS 59

3.2. SELF-HELP COMPARED WITH FACE-TO-FACE TREATMENT 59

3.3. STRUCTURAL FACTORS ASSOCIATED WITH THE OUTCOME of SELF-HELP TREATMENT 61

3.4. PATIENT CHARACTERISTICS ASSOCIATED WITH THE OUTCOME 63

3.5. PROCESS FACTORS ASSOCIATED WITH THE OUTCOME 66

3.6. IMPLICATIONS FOR CLINICAL PRACTICE 70

3.7. STRENGTHS AND LIMITATIONS 72

4. **REFERENCES** 74

Acknowledgments

Western Norway Regional Health Authority and the Anxiety Disorder Research Network at Haukeland University Hospital funded this PhD project.

I want to express my gratitude and appreciation to all the people who have contributed to the work with my PhD thesis in the last seven years.

First and foremost I would like to thank my supervisor, Odd E. Havik for your guidance, support and supervision throughout these years. I am particularly grateful for your availability, welcoming attitude and broad perspectives, and I have experienced it as a privilege to have you as a supervisor.

I would also like to thank my co-supervisor Lars-Göran Öst. Your feedback has always been swift and the point, and very helpful. I have also appreciated that you have given me the opportunity to present my work at international congresses through arranging and chairing numerous symposia at international congresses.

I also thank the other members of the "Assessment and Treatment- Anxiety in Children and Adults" (ATACA) project group; Einar Heiervang, Gerd Kvale, Gerd Bjørkedal, Tone Tangen, Bente Storm Mowatt Haugland, Ole Johan Hovland, Kikki Øding, Ingvar Bjelland, Tine Nordgreen, Krister Westlye Fjermestad, Gro-Janne Henningsen Wergeland and Jon Bjåstad. Being able to take part in a large research clinical trial throughout all its phases, and being surrounded with such competence and experience has given me valuable insight and experiences. I thank you all for interesting discussions and social events in Bergen and on conferences around the world. In particular, I would like to thank Tine for our cooperation and sharing of successes, failures, joys and frustrations for seven years. Also, a special thanks

to the two research coordinators, Stine Hauge and Kristine Fonnes Griffin, whose contributions to the logistics and operating of the ATACA project has been invaluable.

I would also like to thank the staff at my clinical work place through my PhD period, the Årstad Outpatient mental health clinic. You are great colleagues and have been important to preserve my clinical perspective in these years. In particular, I thank the leaders who have been very flexible and accommodating in adapting to the occasionally unpredictable progress of the work with my thesis.

I am very grateful to all the clinicians who have conducted all the assessment and treatment and all the patients who have participated in the ATACA project. Your contribution has been the cornerstone of the ATACA project and this PhD project.

Most importantly, I thank my beloved partner Lina and our two children, Aslak and Eira for your love, patience, and support throughout these years. You are the source of my most joyful and meaningful experiences, and a constant reminder of the important things in life.

Also, I thank my mum, dad and my siblings, Cathrine, Elisabeth and Christian, and their families. You are a great family which I always enjoy spending time with. As both my parents are health researchers, you have probably inspired me more than I have always given you credit for.

Finally I will also thank all my friends, the 18+ film-club in particular. You have been the primary source of my non-domestic fun-experiences throughout my PhD period. I always enjoy spending time with you and share high- and low cultural events.

Bergen June 24, 2014

List of papers

Paper I Haug, T., Nordgreen, T., Öst, L. G., & Havik, O. E. (2012). Self-help treatment of anxiety disorders: A meta-analysis and meta-regression of effects and potential moderators. *Clinical Psychology Review, 32*, 425-445. doi: 10.1016/j.cpr.2012.04.002

Paper II Haug, T., Nordgreen, T., Öst, L. G., Tangen, T., Kvale, G., Andersson, G., Carlbring, P., Hovland, O.J., Heiervang, E. & Havik, O. E. (2014). *A stepped care model versus face-to-face cognitive behavioral therapy in the treatment of panic disorder and social anxiety disorder. Predictors and moderators of outcome.* Manuscript submitted for publication.

Paper III Haug, T., Nordgreen, T., Öst, L. G., Tangen, T., Hovland, O.J., Kvale, G., Heiervang, E. & Havik, O. E. (2014). *Working alliance and competence as predictors of outcome from cognitive behavioral therapy for social anxiety disorder and panic disorder.* Manuscript submitted for publication.

"*The published paper is reprinted with permission from Clinical Psychology Review. All rights reserved.*"

Abstract

The understanding of factors that are associated with the outcome from cognitive behavioral therapy (CBT) for anxiety disorders is limited. Identifying characteristics that are related to the treatment outcome can improve treatments and provide better criteria for matching of patients to treatments that they are likely to benefit from. This thesis investigates factors associated with the outcome from various formats of CBT for anxiety disorders, panic disorder and social anxiety disorder in particular. The thesis comprises three scientific articles that addressed the overall effect of self-help treatment, as well as study-level factors, patient characteristics, and factors related to the therapy process, as predictors and moderators of the treatment outcome from CBT provided as guided self-help, face-to-face treatment and stepped care.

Methods: Paper I investigated the effectiveness of and factors associated with the outcome of self-help treatment for all anxiety disorders. The study sample comprised 56 studies with 82 comparisons of a self-help treatment to a no-treatment/placebo or another active treatment. The overall effectiveness of self-help treatment was investigated in two meta-analyses; one in which self-help was compared to a waiting list or placebo control group (n=56), and one in which self-help was compared to an active treatment (n=28). Potential study level predictors were investigated in subgroup analyses and meta-regression analyses.

Papers II and III used data from a randomized controlled effectiveness trial: the "Assessment and Treatment- Anxiety in Children and Adults" (ATACA) study, which compared immediate face-to-face CBT (FtF-CBT) to a CBT-based Stepped Care treatment model for panic disorder and social anxiety disorder. The Stepped Care model comprised three steps:

psychoeducation, Internet-delivered CBT (ICBT), and face-to-face CBT. The total study sample comprised 173 patients (69 with panic disorder and 104 with social anxiety disorder). All assessment and treatment was conducted by clinical staff in nine public mental health clinics

Paper II investigated nonspecific predictors and moderators of guided self-help, stepped care, and manualized FtF-CBT for panic disorder and social anxiety disorder from the complete study sample in the ATACA study (N=173). The putative predictors and moderators were investigated in multiple regression analyses.

Paper III investigated the working alliance and therapist competence as predictors of the treatment outcome of face-to-face CBT for panic disorder and social anxiety disorder. The study sample comprised the 88 patients (33 with panic disorder and 55 with social anxiety disorder) who were randomized to the immediate FtF-CBT in the ATACA study. The association between the alliance, competence, and outcome was investigated using analyses of covariance and multiple regression analyses.

Results: The results from Paper I indicated a medium- to large-effect size (g=0.78) that favors self-help treatment over a wait list-placebo control group, and a small effect size that favors face-to-face treatment over self-help (g=-0.20). The subgroup analyses and meta-regressions indicated that Internet- and computer-based self-help programs delivered in community settings were associated with superior outcomes to those of self-help delivered as bibliotherapy or conducted in clinical settings. Furthermore, the outcome from the self-help treatment was similar to the outcome from non-specific conventional treatment but poorer than face-to-face CBT.

The results from Paper II indicated that the same patient characteristics generally appear to be associated with the treatment outcome for CBT provided in low- and high-intensity formats. The patients with lower social functioning, more severe anxiety disorder consequences, and a comorbid cluster C personality disorder had significantly less improvement from the treatment. Furthermore, having a comorbid anxiety disorder was associated with a better treatment outcome among the patients with panic disorder but not for the patients with social anxiety disorder. Comorbid depression was associated with a better outcome when the patients were treated with guided self-help but not immediate FtF-CBT.

The results from Paper III indicated that the alliance and competence are independent processes that contribute to the treatment outcome in different phases of the therapy. Higher competence ratings in the early therapy sessions and higher alliance ratings in the late therapy sessions were both associated with a better treatment outcome.

Conclusions: The findings from this thesis indicate that Internet-based self-help treatment can be an important, potentially cost-effective, low threshold supplement to other evidence-based treatments for anxiety disorders. Moreover, it identifies several factors related to the structure and format of the treatment, patient characteristics and factors related to the therapy process that is associated with the outcome of treatment. Thus, this thesis may have important implications for implementation of evidence-based treatment to clinical care. This includes how self-help treatment can be structured and organized, how to identify patients that are likely to improve from treatment, and issues related to the training and supervision of the therapists.

Sammendrag (Abstract in Norwegian)

Det er begrenset kunnskap knyttet til hvilke faktorer som er forbundet med utfallet av kognitiv atferdsterapi (KAT) for angstlidelser. Gjennom å identifisere karakteristikker forbundet med utfallet av behandlingen kan en øke effekten og etablere kriterier for å selektere pasienter til ulik behandling. Denne avhandlingen undersøker faktorer som er forbundet med utfallet av behandling med ulike formater av (KAT) for angstlidelser. Det er et særlig fokus på panikklidelse og sosial angst lidelse. Avhandlingen inneholder tre vitenskapelige artikler som undersøkte den samlede effekt av selvhjelpsbehandling, samt prediktorer og moderatorer for utfall av KAT, levert som veiledet selvhjelp, ansikt-til-ansikt terapi og som trinnvis behandling. Disse omfattet faktorer knyttet til struktur og format for behandlingen, pasientegenskaper, og faktorer forbundet med behandlingsprosessen

Metode: Artikkel I undersøkte effekten av- og faktorer forbundet med utfallet av selv-hjelps behandling for angstlidelser. Studien inkluderte 56 studier som inneholdt 82 sammenlikninger av en selv-hjelpsbehandling med en kontroll gruppe. Den samlede effekt av selvhjelps-behandling ble undersøkt i to meta-analyser; en der selvhjelp ble sammenliknet med en venteliste eller placebo kontrollgruppe (n= 56), og en der selvhjelps-behandling ble sammenliknet med an annen aktiv behandling (n=28). Potensielle prediktorer på studie nivå ble undersøkt i sub-gruppe analyser og meta-regresjonsanalyser.

Artikkel II og artikkel III benyttet data fra en randomisert kontrollert studie; behandlingsstudien ”Kartlegging og Behandling- Angst hos Barn og Voksne” (ATACA) Denne studien sammenliknet ansikt-til-ansikt-KAT med en trinnvis behandlingsmodell for pasienter med panikklidelse eller sosial angstlidelse. Den trinnvise behandlingsmodellen besto

av tre trinn: psykoedukasjon, veiledet internett basert selv-hjelp, og ansikt-til-ansikt KAT. Studien inkluderte 173 pasienter (69 med panikklidelse, 104 med sosial angst lidelse). All kartlegging og behandling ble utført av klinikere ved ni offentlige allmenpsykiatriske poliklinikker.

Artikkel II undersøkte prediktorer og moderatorer for utfall av veiledet internett basert selvhjelp, trinnvis behandling og ansikt-til-ansikt KAT for panikklidelse og sosial angstlidelse. Alle pasienter fra ATACA studien var inkludert i studien (N=173). De antatte prediktorene og moderatorene ble undersøkt i multiple regresjonsanalyser.

Artikkel III undersøkte sammenhengen mellom arbeidsalliansen mellom pasienten og terapeuten, terapeutens kompetanse, og utfallet av ansikt-til-ansikt KAT for panikklidelse og sosial angst lidelse. Utvalget for studien inkluderte de 88 pasientene (33 med panikklidelse, 55 med sosial angst lidelse) som ble randomisert direkte til ansikt-til-ansikt KAT i ATACA studien. Sammenhengen mellom arbeidsalliansen, terapeutens kompetanse og utfall av behandlingen ble undersøkt i kovariansanalyser og multiple regresjonsanalyser..

Resultater: Resultatene fra artikkel I indikerte en medium til stor effektstørrelse (g=0.78) i favør av selv-hjelpsbehandling sammenliknet med en venteliste eller placebo kontrollgruppe, og en liten effekt i favør av ansikt-til-ansikt behandling sammenliknet med selv-hjelp (g=-0.20). Sub-gruppe analyser og meta-regresjonsanalyser indikerte at behandling med data- og internett baserte selv-hjelps programmer, og behandling som ble utført utenfor kliniske settinger, var forbundet med et bedre utfall enn når selvhjelp ble levert i form av biblioterapi og gjennomført i ordinære kliniske settinger. Videre var utfallet av selv-hjelpsbehandling tilsvarende som ordinær, ikke spesialisert ansikt-til-ansikt behandling, men noe svakere enn for ansikt-til-ansikt KAT.

Resultatene fra artikkel II indikerte at i hovedsak de samme faktorer ser ut til å være forbundet med utfallet av behandling med lav- og høy-intensitets KAT. Pasienter med lavere grad av sosial fungering, mer alvorlige konsekvenser av sin angstlidelse, samt pasienter med en engstelig/ unnvikende personlighetsforstyrrelse hadde dårligere utfall av behandlingen. Videre var tilstedeværelse av en komorbid angstlidelse forbundet med et bedre utfall blant pasienter med panikklidelse, men ikke pasienter med sosial angstlidelse. Tilstedeværelse av en komorbid depresjon var forbundet med et bedre utfall blant pasienter som ble behandlet med veiledet selvhjelp, men ikke blant pasienter som ble behandlet med ansikt-til-ansikt KAT.

Resultatene fra artikkel III indikerte kompetanse og allianse er uavhengige prosesser som bidrar til utfallet av behandlingen i ulike faser av terapien. Høyere kompetanse vurderinger av terapeuten i sesjoner tidlig i terapien og høyere vurderinger av arbeidsalliansen i sesjoner sent i terapien var begge forbundet med et bedre utfall fra KAT,

Konklusjoner: Funn fra denne avhandlingen indikerer at internett basert selvhjelps behandling kan være et viktig og potensielt kostnadseffektivt lavterskel tilskudd til øvrig evidensbasert behandling for angstlidelser. I tillegg ble det identifisert flere ulike faktorer knyttet til struktur og format på behandlingen, pasient karakteristikker, og faktorer ved behandlingsprosessen som er forbundet med utfallet av KAT i ulike formater. Denne avhandlingen kan ha implikasjoner for implementering av evidensbasert behandling til klinisk virksomhet. Dette inkluderer hvordan selvhjelp bør struktureres og organiseres, hvordan identifisere pasienter som kan antas å profittere på behandlingen, samt til tema knyttet til opplæring og veiledning av terapeuter i klinisk praksis.

Abbreviations

ACQ	Agoraphobic Cognitions Questionnaire
AMOS	Analysis of Moments Structures
ANCOVA	Analysis of Covariance
ANOVA	Analysis of Variance
APA	American Psychological Association
ATACA	Assessment and Treatment - Anxiety in Children and Adults
BAI	Beck Anxiety Inventory
BSQ	Body Sensation Questionnaire
CBT	Cognitive behavioral therapy;
CMA2	Comprehensive meta-analysis version 2
CSR	Clinician Severity Rating
CTACS	Cognitive Therapy Adherence Competence Scale
DSM-IV	Diagnostic and Statistical Manual of Mental Disorders (4th ed.)
ES	Effect size
FIML	Full information maximum likelihood
FtF	Face-to-face

GAD	Generalized anxiety disorder
GSH	Guided self-help
ICBT	Internet delivered Cognitive Behavioral Therapy
ICC	Intra class correlation
ITT	Intention to treat
MI-A	Mobility Inventory- Alone
MIA	Mixed anxiety disorders
MIA/D	Mixed anxiety/depression
NICE	National Institute of Clinical excellence
OCD	Obsessive compulsive disorder
PD	Panic disorder
PTSD	Post-traumatic stress disorder
RCT	Randomized controlled trial
SAD	Social Anxiety disorder
SCID-I	Structural Clinical Interview for DSM-IV Axis-I Disorders
SCID-II	Structural Clinical Interview for DSM-IV Personality Disorders
SIAS	Social Interaction Anxiety Scale

SPH	Specific phobia
SPS	Social Phobia Scale
SPSS	Statistical Package for the Social Sciences
SR	Self-report
TAU	Treatment as usual
WAI	Working Alliance Inventory
WLP	Wait-list/placebo

1. Introduction

The aim of the present thesis is to investigate factors associated with the treatment outcome of cognitive behavioral therapy (CBT) provided as a face-to-face therapy and guided self-help. The effectiveness of CBT is well documented in the treatment of anxiety disorders (Butler, Chapman, Forman, & Beck, 2006). However, findings from research indicate that approximately one third of CBT patients do not obtain clinically significant improvement from their treatment and that approximately one-fifth of CBT patients drop out during treatment in research trials (Taylor, Abramowitz, & McKay, 2012).

Less than one-third of the patients with an anxiety disorder currently receive psychological treatment in public mental health care (Alonso et al., 2007; R. C. Kessler, Demler, et al., 2005). The limited availability of therapists is one important reason for this. Furthermore, the low detection rates of anxiety disorders in primary care suggests that these conditions have a low status and are not prioritized for further treatment (D. Kessler, Lloyd, Lewis, & Gray, 1999). One way to overcome this limited access of evidence-based treatments is by offering more patients so-called low-intensity treatments that places less demands on therapist resources (Bennett-Levy, Richards, Farrand, Christensen, & Griffiths, 2010). However, more research on the effect of these low-intensity treatments in public mental health care is needed.

Despite numerous studies that address factors that are associated with a better or worse prognosis of treatment, few characteristics have consistently been identified as predictors of the outcome of CBT for anxiety disorders (Newman, Crits-Christoph, Gibbons, & Erickson, 2006). Factors associated with the treatment outcome regardless of the type and format of the treatment (i.e., *non-specific predictors*) can provide information about the prognosis of

patients and identify those who are possibly in need of extra attention and more adapted treatment. However, patient characteristics that are associated with the outcome of one specific treatment but not another (i.e., *moderators*) can also improve the matching of patients to treatments they are likely to benefit from and thus give directions for specific treatment choices (Kraemer, Wilson, Fairburn, & Agras, 2002). In addition to patient characteristics, factors associated with the format and structure of the treatment, the therapy process, and the therapists' in-session behaviors may be associated with the treatment outcome. This includes the alliance between the patient and the therapist as well as the therapists' competence in conducting CBT.

Currently, the research on patient characteristics as moderators of the treatment outcome and the association between therapy process factors and the outcome of CBT for anxiety disorders is limited and characterized by inconclusive findings. The majority of the research in this field is based on randomized controlled trials (RCTs) that are often characterized with homogenous samples, which limit the probability of identifying predictors of the treatment outcome. Moreover, these trials are commonly conducted in research settings with conditions that differ from ordinary clinical care on many dimensions (Kazdin, 2003b). As a consequence, the generalizability of the findings to ordinary clinical care has been questioned (Westen, Novotny, & Thompson-Brenner, 2004). Thus, there is a need for more research on the factors that are associated with the outcome of various formats of CBT for anxiety disorders based on studies conducted in clinical settings.

This thesis investigates predictors and moderators of treatment outcome from low- and high-intensity formats of CBT with a particular focus on panic disorder and social anxiety disorder. The following research questions are addressed: 1) what is the overall effectiveness and

which factors are associated with the treatment outcome of CBT-based self-help treatment for anxiety disorders? (Paper I); 2) which factors are associated with the outcome of CBT delivered as stepped care model compared with immediate face-to-face CBT in the treatment of panic disorder and social anxiety disorder? (Paper II); and 3) what is the association of the therapist´s competence and the working alliance to treatment outcome in manualized face-to-face CBT for panic disorder and social anxiety disorder? (Paper III). Papers II and III used data from the adult part of the research project "Assessment and Treatment-Anxiety in Children and Adults" (ATACA).

In the following, I will first provide a brief presentation of the epidemiology and characteristics of anxiety disorders. Then, the rationale and theory of CBT for anxiety disorders and some of the main findings from empirical- and treatment-outcome research will be presented. Subsequently, I will review the research literature related to the primary research questions in the present thesis: predictors and moderators of treatment outcome from CBT in various formats for anxiety disorders. Because panic disorder and social anxiety disorder are the primary diagnoses in question in two of the papers, the research that addresses these two conditions will be presented in more detail.

1.1. Anxiety disorders

Anxiety disorders are the most prevalent group of mental health disorders, with an estimated lifetime prevalence of approximately 30% and an estimated 12-month prevalence of approximately 20% for all anxiety disorders (R. C. Kessler, Chiu, Demler, Merikangas, & Walters, 2005). Anxiety disorders are associated with a substantial increase in disability, functional impairment, and reduced quality of life (Wittchen, Fuetsch, Sonntag, Müller, & Liebowitz, 1999; Wittchen et al., 2011). On average approximately 50% of patients with an

anxiety disorder have at least one comorbid mental health disorder, which is most commonly an additional anxiety disorder or unipolar depression (Regier, Rae, Narrow, Kaelber, & Schatzberg, 1998). In these cases, the onset of the anxiety disorder most commonly precedes the onset of the depressive disorder, which suggests that the anxiety disorder is a risk factor for development of a depressive disorder. Furthermore, persons with anxiety disorders are heavy consumers of health services and have reduced work participation as a result of sick leave and disability. Thus, anxiety disorders are persistent and highly disabling conditions associated with a number of negative consequences and substantial economic and societal burdens (Wittchen et al., 2011).

1.1.1. Panic disorder

The manifestation of panic has been described in the literature for over 2500 years and is derived from the Greek mythology of the god Pan, whose angry shouts would instill people and herds with a feeling of terror when in lonely places (http://en.wikipedia.org/wiki/Panic). In the DSM-IV, a panic attack is defined as an intense discrete episode of unexpected fear and discomfort accompanied by various somatic symptoms such as chest pain, trembling, sweating, palpitations, shortness of breath, paresthesia, and cognitive symptoms, e.g., fear of dying, losing control or going insane. In the DSM-IV, panic disorder is defined as recurrent (more than two) unexpected panic attacks that peak within 10 min and are followed by one month or more of persistent worry about future attacks, worry about consequences of the attack, or a behavioral change such as frequent medical checks as a result of the attacks (American Psychiatric Association, 2000). Panic disorder may be accompanied by agoraphobia, which is characterized by avoidance or endurance with significant distress in situations that are difficult to escape or in which help is unavailable in the event of a panic

attack or panic symptoms. This may lead the individual affected to avoid activities such as driving and entering public places, supermarkets, theatres, and crowds of people; in the most severe cases, individuals completely avoid travelling away from home. Another associated feature is so-called 'interoceptive avoidance,' which is exemplified by the avoidance of substances (e.g., coffee) or activities (e.g., exercise) that may produce somatic sensations that resemble the symptoms associated with a panic attack (Barlow, 2004). The lifetime prevalence of panic disorder with or without agoraphobia is between 1 and 4.5%, and the 1-year prevalence is between 1 and 2.6% (Goodwin et al., 2005; R. C. Kessler, Berglund, et al., 2005; R. C. Kessler, Chiu, et al., 2005). An epidemiologic survey on a Norwegian population found a 4.5% prevalence for panic disorder and a 6.7% prevalence for panic disorder with agoraphobia (Kringlen, Torgersen, & Cramer, 2001). Panic disorder has a median age of onset of approximately 24 years (Burke, Burke Jr, Regier, & Rae, 1990). It is about twice as common among women as among men (R. C. Kessler et al., 1994) and tends to take a more severe course among women than men (D. A. Clark & Beck, 2010). Most patients with panic disorder eventually seek treatment, but there is a considerable delay between onset and the first treatment contact (Wang, Berglund, et al., 2005). Panic disorder is associated with significant functional impairment and decrements in quality of life, physical health, mental health, work-, social- and family-functioning, and if left untreated, it typically takes a chronic course with only 12% of patients achieving complete remission after five years (Faravelli, Paterniti, & Scarpato, 1995). Moreover, patients with panic disorder are high consumers of various medical services (Dammen, Ekeberg, Arnesen, & Friis, 1999; Leon, Olfson, & Portera, 1997; Leon, Portera, & Weissman, 1995). It has been reported that it takes up to 10 years of somatic health care utilization from emergency departments as well as general medical and psychiatric services before a correct diagnosis of panic disorder is made

(Simpson, Kazmierczak, Power, & Sharp, 1994). This leads to additional negative social consequences such as work disability and substantial economic costs from both mental and somatic health care services (Edlund & Swann, 1987; Siegel, Jones, & Wilson, 1990; Wang, Lane, et al., 2005).

1.1.2. Social anxiety disorder

Social anxiety disorder is characterized by a persistent fear of scrutiny and negative evaluation from others. This leads to avoidance or marked discomfort associated with social or performance situations. Individuals with social anxiety disorder tend to be highly self-conscious and self-critical. The common triggers of anxiety are usually related to some aspect of self-presentation such as exhibition of symptoms of anxiety or acting in some other perceived humiliating manner. In feared social situations, individuals with social anxiety disorder often exhibit involuntary inhibitory behaviors such as appearing stiff and rigid and display safety behaviors (e.g., avoiding eye contact). These behaviors may result in detrimental social performance and paradoxically increase the unwanted attention of others. As a consequence, the feared symptoms and risk of perceived negative evaluation increases (D. A. Clark & Beck, 2010; D. M. Clark, 1995). With the exception of specific phobias, social anxiety disorder is the most common of the anxiety disorders, and it is the fourth most common of all mental disorders according to the DSM-IV and ICD-10. The lifetime prevalence is between 12 and 14%, and the 12-month prevalence is 7-8%, with an approximate gender ratio of 3:2 towards women over men (R. C. Kessler, Berglund, et al., 2005; R. C. Kessler, Chiu, et al., 2005; R. C. Kessler et al., 1994; Kringlen et al., 2001). The onset of social anxiety disorder typically occurs in early to mid-adolescence. This is a substantially lower age of onset than for other anxiety disorders, with the exception of

specific phobia (R. C. Kessler, Berglund, et al., 2005). Social anxiety disorder is a persistent condition, and it is associated with a chronic and unremitting course when untreated (Beidel & Turner, 2007; D. A. Clark & Beck, 2010; Fehm, Pelissolo, Furmark, & Wittchen, 2005; Hofmann & Barlow, 2002). Individuals with social anxiety disorder are less likely to seek treatment and have a longer delay from onset to treatment seeking than those with other mental health disorders (D. A. Clark & Beck, 2010). Research indicates that only approximately one-quarter of individuals who meet the criteria for social anxiety disorder seek treatment, and there is a median delay of 16 years from onset to treatment for those who seek treatment (Wang, Berglund, et al., 2005; Wang, Lane, et al., 2005). Moreover, social anxiety disorder is associated with a high degree of comorbid mental disorders, which are most commonly depression, other anxiety disorders, and alcohol/substance abuse (Fehm et al., 2005). As a rule, the social anxiety precedes the other comorbid conditions. For depression in particular, there are studies that indicate a causal link between social anxiety and subsequent depression (Stein et al., 2001). Hence, social anxiety disorder is associated with substantial impairment in many areas such as an increased risk for depression, reduced work participation, disability, and reduced quality of life. Consequently, the societal and economic burden of social anxiety disorder is substantial (Fehm et al., 2005; Wang et al., 2007).

1.2. Cognitive behavioral therapy

Cognitive behavioral therapy (CBT) is the generic term for therapy techniques based on cognitive and behavioral models. In general, this treatment aims to modify patterns of distorted thinking and dysfunctional behavior that cause and maintain distress. Cognitive techniques are various approaches for systematic discussion and experiments (e.g., identify

and modify negative automatic thoughts), and behavioral techniques are structured behavioral assignments (Hawton, Salkovskis, Kirk, & Clark, 1989). The common features of CBT across treatments for various disorders are psychoeducation, the development of an individualized cognitive case conceptualization, as well as the identification and modification of distorted thinking and behaviors related to the problem in question. Other therapeutic techniques include Socratic questioning, guided discovery, use of homework, in-therapy cognitive and behavioral assignments, exposure and behavioral experiments (J. S. Beck, 2011). The original theory and treatment principles of CBT were targeted at the treatment of depression (A. T. Beck, Rush, Shaw, & Emery, 1979). Since then, specific cognitive behavioral models based on these principles have been developed for all categories of mental health problems (Hawton et al., 1989).

The effect of face-to-face CBT for all anxiety disorders has been well documented in a large number of randomized controlled clinical trials (RCT), systematic reviews, and meta-analyses over the last 20 years (Bandelow, Seidler-Brandler, Becker, Wedekind, & Ruther, 2007; Hofmann & Smits, 2008; Norton & Price, 2007; Olatunji, Cisler, & Deacon, 2010; Tolin, 2010; Öst, 2008). In more recent years, self-help treatment based on CBT for anxiety disorders has also been investigated, and the results indicate fairly good effects (Cuijpers, Donker, van Straten, Li, & Andersson, 2010; Cuijpers et al., 2009; Haug, Nordgreen, Öst, & Havik, 2012; Hirai & Clum, 2006; Spek et al., 2007).

In the following, the specific CBT models for the treatment of panic disorder and social anxiety disorder will be presented along with a review of some of the research on the outcome of CBT for these conditions. Subsequently, an overview of various models for delivering CBT and the implications this may have for clinical practice will be provided.

1.2.1. Cognitive behavioral therapy for panic disorder

The two most widely acknowledged cognitive models for the conceptualization and treatment of panic disorder today were developed by D. M. Clark (1986) and Barlow, Gorman, Shear, and Woods (2000). Both of these models propose that the primary mechanisms that trigger panic attacks are catastrophic misinterpretations of changes in physical sensations or mental processes, e.g., increased heart rate is interpreted as a heart attack. In accord with this, the most central goal of CBT for panic disorder is to address the dysfunctional cognitions and behavior related to catastrophic interpretations of bodily symptoms associated with fear and anxiety. These cognitive models for panic have received strong support from empirical research (Barlow, 2004; D. A. Clark & Beck, 2010; D. M. Clark et al., 1997), and the efficacy of treatment based on these models has been supported in in a large number of randomized controlled trials and meta-analyses when delivered as face-to-face CBT (Gould, Otto, & Pollack, 1995; Norton & Price, 2007; Stewart & Chambless, 2009) or guided self-help (Cuijpers et al., 2009; Haug et al., 2012; Hirai & Clum, 2006; Reger & Gahm, 2009). Direct comparisons between face-to-face CBT and other active treatments for panic indicate an equal or superior outcome compared with applied relaxation (Arntz & Van Den Hout, 1996; D. M. Clark et al., 1994; Öst, Thulin, & Ramnerö, 2004; Öst & Westling, 1995) and equal short term and superior long term effects compared with pharmacotherapy (Barlow et al., 2000; D. M. Clark et al., 1994; Cuijpers et al., 2013; Gould et al., 1995; Klosko, Barlow, Tassinari, & Cerny, 1990; Mitte, 2005; Sharp et al., 1996). This indicates that CBT based on these models has specific and lasting effects in the treatment of panic disorder. CBT based on the Clark versus the Barlow model have not been compared directly, but the effect sizes have tended to be somewhat larger for the Clark model (Siev & Chambless, 2007). CBT based on these models delivered as guided self-help or face-to-face CBT are currently listed as the treatment

of choice for panic disorder according to the guidelines from National Institute of Clinical Excellence (NICE) in Great Britain, the American Psychiatric Association (APA) (http://www.psychologicaltreatments.org/) and the American Psychological Association (http://psychiatryonline.org/content.aspx?bookid=28&sectionid=1680635) among others.

Due to the dynamics of panic disorder, it is vital that patients receive an accurate diagnosis and adequate interventions at an early stage before vicious cycles of avoidance have been established. If discovered and treated at an early stage, research findings indicate that panic patients may recover with very brief interventions such as psychoeducation and brief self-help interventions (Cape, Whittington, Buszewicz, Wallace, & Underwood, 2010; Houghton & Saxon, 2007). Thus, increasing the access to mental health services and diagnosing and treating panic at an early stage may improve prognoses for people affected and significantly reduce societal costs.

1.2.2. Cognitive behavioral therapy for social anxiety disorder

Various CBT approaches for social anxiety disorder have consistently reported immediate and enduring treatment effects with moderate- to large-effects sizes from both efficacy and effectiveness studies (Acarturk, Cuijpers, van Straten, & de Graaf, 2009; Hofmann & Smits, 2008; Norton & Price, 2007; Rodebaugh, Holaway, & Heimberg, 2004; Stewart & Chambless, 2009). The cognitive model developed by D. M. Clark and Wells (1995) is perhaps the most widely acknowledged model for the conceptualization and treatment of this condition today. According to this model, two forms of automatic inhibitory behaviors before, during, and after the feared social situation are of particular importance in explaining why social anxiety persists despite of repeated exposure to feared social situations. These are heightened self-focused attention and strategies used to reduce the situational anxiety (e.g.,

avoiding eye contact or minimizing social interaction), which are referred to as safety behaviors. The Clark and Wells model propose that individuals with social anxiety disorder devote most of their attention resources to the self-monitoring of symptoms of anxiety and their own performance in feared social situations. This increases the focus on anxiety-related cues and experiences and hinders the processing of information that would disconfirm the negative expectations. In addition, the heightened anxiety results in the use of safety behaviors and other involuntary inhibitory behaviors such as appearing detached, inattentive or stiff. This may paradoxically draw the attention of others, which increases the feared symptoms and the perceived risk of negative evaluation. Consequently, the person is likely to conclude that his or her performance was much worse and more negatively evaluated than was the case, which reinforces the biased mental representations of the social situation. Therefore, the key elements in the treatment aim to reduce the use of these strategies in social situations associated with anxiety (D. M. Clark & Wells, 1995). Face-to-face treatment based on the Clark and Wells model have proven effective in numerous randomized controlled trials, and the proposed key elements have also been supported in experimental research (D. A. Clark & Beck, 2010). In direct comparisons with other treatments, studies have indicated that CBT based on this model is associated with a superior treatment outcome to Group CBT (Mortberg, Clark, Sundin, & Wistedt, 2007; Stangier, Heidenreich, Peitz, Lauterbach, & Clark, 2003), pharmacotherapy (D. M. Clark et al., 2003; Stangier et al., 2003), exposure plus relapse prevention, and applied relaxation (D. M. Clark et al., 2006), interpersonal therapy (Stangier, Schramm, Heidenreich, Berger, & Clark, 2011), and psychodynamic therapy (Leichsenring et al., 2013). Several studies have indicated large-effect sizes for Internet-delivered CBT (ICBT) for social anxiety disorder (Andersson et al., 2006; Berger et al., 2011; Berger, Hohl, & Caspar, 2009; Carlbring, Gunnarsdottir, et al., 2007; Furmark et al., 2009).

Moreover, research indicates that the effect of CBT for social anxiety disorders is mediated by specific changes in beliefs and cognitive schema (Hoffart, Borge, Sexton, & Clark, 2009; Hofmann, 2004), which suggests that this treatment is possibly superior to major alternative interventions in terms of both efficiency and specificity (Hollon & Beck, 2013). Treatment based on this model is recommended as the treatment of choice according to clinical guidelines (NICE, 2013).

1.3. Low-intensity CBT

Despite robust and consistent documentation from over 40 years of research that supports the efficiency of face-to-face CBT for anxiety disorders, the majority of the affected individuals do not currently receive treatment (Wang et al., 2007). Thus, one of the major challenges in clinical research and practice today is to increase access to treatment and implement evidence-based treatments in public mental health care. Several factors can explain why sufferers of anxiety do not receive treatment. Among these are that a large proportion of individuals with anxiety disorders do not seek help. This can be related to, e.g., treatment costs, fear of stigma related to mental health problems, and long travel distances for those who live in rural areas. In addition, patients are often met with inadequate procedures for the assessment and identification of anxiety disorders in primary care, which results in the majority of the affected individuals not being diagnosed for their anxiety disorders when they seek help (D. Kessler et al., 1999). For patients who receive psychological treatment, the most common treatment option is face-to-face psychotherapy. This treatment places heavy demands on therapists' resources and thereby limits the availability of treatment. This has resulted in an increased interest in the use of so-called low-intensity interventions for mental health problems. Low-intensity intervention is an umbrella term for a variety of procedures with the

objective of increasing the availability and diversity of treatment approaches and reducing the costs related to treatment. The primary goal of low-intensity interventions is to use the minimum amount of therapist time to obtain the maximum gain (Bennett-Levy, Richards, & Farrand, 2010). Low-intensity CBT is typically relatively simple and brief and aims to communicate CBT principles in an accessible and flexible way in a variety of forms and media. Such therapies often use technological aids such as the telephone, computer software or the Internet to increase flexibility and availability of treatment. The low-intensity treatment that has received most attention in the research literature is referred to as guided self-help treatment. This treatment format is also the low-intensity treatment of primary focus in this thesis. Other examples of low-intensity interventions are psychoeducation, bibliotherapy, group therapy, and brief face-to-face therapy.

In the following, I will provide a conceptualization and review of the research literature on various models of self-help treatment as well as how self-help and other low-intensity treatments can be delivered and organized. Subsequently, I will present the factors related to the delivery and setting of self-help treatment that were investigated as potential predictors of treatment outcome in this thesis.

1.3.1. Psychoeducation

Psychoeducation is one of the most commonly used low-intensity interventions. It usually comprises information that is relevant to the development and maintenance of the condition in question, principles for treatment and basic coping strategies. This can be provided via group or individual face-to-face session(s) and/or self-help material. Psychoeducation is an important part of all cognitive behavioral treatments, but some studies indicate that psychoeducation as a stand-alone intervention can lead to clinically significant change for a

small group of patients in the treatment of depression and anxiety disorders (Donker, Griffiths, Cuijpers, & Christensen, 2009; Houghton & Saxon, 2007). Furthermore, psychoeducation is associated with high acceptability, credibility, and satisfaction among patients (Houghton & Saxon, 2007; Rummel-Kluge, Pitschel-Walz, & Kissling, 2009). Because this is an inexpensive, easily administered and potentially more accessible treatment approach, it can be an important supplement to conventional psychological interventions in mental health care.

1.3.2. Self-help Treatment

In this thesis, I follow Cuijpers and Schuurmans (2007) definition of self-help treatment as a standardized psychological treatment protocol that comprises guidance for applying a generally accepted psychological treatment to a mental health problem. The self-help treatment protocol is typically composed of information, explanations, and exercises that are relevant for the actual problem. The treatment is distributed through various media such as written books, computer software, or the Internet. The patients do the majority of the intervention on their own, and they are expected to spend 3-6 h a week on exercises and training in most programs. The contact with a therapist is either non-existent or minimal and only facilitative or supportive in nature. The vast majority of these programs are based on CBT

Until 2000, the most common self-help treatment format was written manuals or books, which was often described as bibliotherapy (Marrs, 1995; Rosen, 1987). Two early meta-analyses on the effects of bibliotherapy found moderate effect sizes across various conditions; however, subgroup analyses indicated large-effect sizes for studies that target anxiety problems and fear reduction (Gould & Clum, 1993; Marrs, 1995). A later meta-analysis

aggregated over both bibliotherapy and computerized self-help indicated a moderate average effect size when compared with a waiting-list (Hirai & Clum, 2006). Over the last 15 years, computer- and Internet-based self-help programs have become increasingly common. Some of these programs are complete CBT manuals that are modified to be delivered over the Internet. These programs are often referred to as Internet-delivered CBT (ICBT) (Andersson, Carlbring, Ljótsson, & Hedman, 2013). In this thesis, computer- and Internet- based self-help refers to computerized self-help programs in various formats and scope, whereas ICBT refers to full CBT manuals that are adapted to be delivered over the Internet. Self-help treatment in this format has been investigated in a large number of RCTs, and recent systematic reviews and meta-analyses have indicated large effect sizes for the treatment of anxiety disorders, panic disorder and social anxiety disorder in particular (Cuijpers et al., 2010; Haug et al., 2012; Reger & Gahm, 2009; Spek et al., 2007).

1.3.2.1. Self-help compared with face-to-face treatment

In recent years, a relatively large number of studies have compared the outcome of self-help and face-to-face treatment. A previous meta-analysis on mixed formats of self-help treatment indicated an overall superior but small effect of face-to-face treatment compared with self-help (Hirai & Clum, 2006), but more recent meta-analyses focusing on computer and Internet-based self-help have indicated no differences in the outcome of self-help treatment compared with face-to-face treatment (Cuijpers et al., 2010; Lewis, Pearce, & Bisson, 2012; Reger & Gahm, 2009).The findings consistently indicate that the outcomes of ICBT and face-to-face treatment are fairly equal in the treatment of panic disorder in particular (Andersson, 2012; Bergstrom et al., 2010; Carlbring et al., 2005), and there is growing evidence that indicates an

equal outcome of these treatment formats in the treatment of social anxiety disorder (Andersson, 2012; Botella et al., 2010; Furmark et al., 2009).

Thus, the current evidence regarding the effect of self-help treatment is promising, and research indicates that patients treated with ICBT have fairly similar outcomes to those treated with face-to-face treatment. However, the findings are still inconclusive when self-help in formats other than ICBT is taken into consideration. Moreover, most studies that compare self-help and face-to-face treatment have been conducted in research settings, which may yield different findings than studies conducted in clinical settings. There are also several unresolved issues related to identifying the best format and structure for self-help treatment and identifying which patients are likely to profit. These research questions are addressed in Papers I and II.

1.4. Organization of services: Stepped care treatment

Low-intensity interventions are offered either as stand-alone treatment or in combination with other more intensive treatment approaches. One way of delivering low-intensity interventions is as part of a stepped care treatment model. The general principle behind stepped care models is to start treatment at the lowest intensity that is assumed to lead to a successful treatment outcome and step up to more intensive treatment if needed (Bower & Gilbody, 2005; Haaga, 2000). Stepped care models have a relatively long history in medical interventions. In the recent years, a growing number of stepped care interventions have been developed for various psychological and behavioral problems such as addictions (Brooner et al., 2007; Reid et al., 2003), anxiety and depression (Seekles, van Straten, Beekman, van Marwijk, & Cuijpers, 2009, 2011; van't Veer-Tazelaar et al., 2009), OCD (Tolin, Diefenbach, Maltby, & Hannan, 2005), obesity and weight loss (Carels et al., 2009), and back pain (Von Korff & Moore,

2001). Stepped care models usually include three to six steps of increasing intensity (O'Donohue & Draper, 2011). One fundamental feature of a stepped care model is that it is self-corrective, which implies a need for the systematic monitoring of progress and the outcome of treatment to make valid decisions about further treatment (Bower & Gilbody, 2005). The primary research question in Paper II in this thesis was to investigate the potential predictors and moderators of treatment outcome of CBT provided in various formats. This study was based on data from the research study "Assessment and Treatment-Anxiety in Children and Adults" (ATACA) in which a stepped care treatment model was compared with immediate face-to-face CBT for panic disorder and social anxiety disorder. It has been highlighted that the organization of a stepped care model makes it particularly well suited for the study of predictors and moderators for different treatments (Baillie & Rapee, 2004). A more specific presentation of the design, procedures, and treatments used in the ATACA study will be provided later.

1.5. Predictors and moderators

As mentioned, a fairly large proportion of the patients who seek help or participate in research trials do not obtain a clinically significant change from the treatment (Lambert, 2013). In this context, there is a need for a better understanding of the factors associated with the treatment outcome. *Prognostic- or non-specific predictors* are factors related to the prognosis of treatment outcome regardless of the nature of the disorder and the content of the treatment. *Prescriptive predictors* or *moderators* are characteristics that are associated with outcome of a particular treatment or diagnosis (Holmbeck, 1997; Kraemer et al., 2002). Acquiring knowledge about possible predictors and moderators can provide guidance for optimizing

treatment choices, improving the matching of patients to various treatments, and reducing dropout rates.

A conceptualization of various categories of factors that may be associated with the treatment outcome will be provided below. I will first present study level factors associated with the structure, format and setting of the treatment that were investigated as predictors of the treatment outcome from self-help treatment in Paper I. Next, a review of the research literature on the patient characteristics that were investigated as predictors and moderators of treatment outcome in Paper II will be provided. This will be followed by a presentation of the central research findings and current controversies regarding the associations between the working alliance, as well as therapist competence, and the treatment outcome, which were investigated as predictors in Paper III.

1.5.1. Structural factors as predictors of treatment outcome

Paper I in this thesis addressed study level factors related to the organization, format, and structure of self-help treatment as potential predictors of the outcome. This included the media used for delivering self-help, whether and how a therapist should guide the treatment, and the setting in which the treatment was provided. Better understanding of the associations between these factors and the treatment outcome can further optimize the effect of treatment and implementation to clinical care.

1.5.1.1. Self-help treatment format

Internet-based self-help have obvious advantages over bibliotherapy, which include a greater potential for interactivity, individual tailoring, and the possibility to update treatment programs and monitor patients in the program. Thus, Internet- based self-help is most likely

the self-help format of the future. However, it has not yet been consistently demonstrated whether Internet-based self-help is associated with a better outcome than bibliotherapy. One aim in Paper I in the present thesis was to compare the summary effect of these two self-help formats.

1.5.1.2. Therapist contact: Guided vs. non-guided self-help

An issue frequently debated in the literature on self-help is whether and how therapist contact should be provided along with the treatment. Self-help treatment with some form of added therapist guidance has been associated with a better treatment outcome than self-help with no therapist guidance (Palmqvist, Carlbring, & Andersson, 2007; Spek et al., 2007). However, the present understanding of which format of therapist guidance that is best suited to accompany self-help treatment is very limited. The frequency, amount, schedule, and type of therapist contact are all factors that potentially influence the treatment outcome and cost-effectiveness through differences in demand on therapists' resources, flexibility, and satisfaction among patients. Palmqvist et al. (2007) found that increased therapist contact was associated with a better treatment outcome for ICBT. However, this finding has not been supported in other studies (Hirai & Clum, 2006). There are also some indications that the therapist contact should be personal and individualized (Carlbring, Ekselius, & Andersson, 2003), but studies that address the association between type and schedule of therapist contact have yielded inconclusive findings (Newman, Szkodny, Llera, & Przeworski, 2011). Thus, the summary of research on this issue needs to be updated, and this was one of the research questions addressed in Paper I.

1.5.1.3. Clinical vs. Community settings

A central aspect related to the implementation of self-help treatment and face-to-face CBT is how the outcome of treatment generalizes from research trials to clinical settings. Research trials are characterized by differences in the procedures for the recruitment of patients and the selection, supervision and training of therapists compared with clinical practice (Kazdin, 2003b; Lebow, 2013). Given these differences, clinicians and clinical researchers have questioned the external validity of RCT studies, and it has been claimed that the clinical representativeness and relevance to everyday clinical care are compromised in RCTs (Weisz & Addis, 2006; Westen et al., 2004). Thus, before evidence-based treatment models can be implemented in clinical care, their efficacy must be demonstrated in effectiveness studies conducted in naturalistic settings. This research question was addressed in Paper I and Paper II.

1.5.2. "What works for whom?" Patient characteristics as predictors and moderators of treatment outcome

One of the goals of this thesis was to obtain findings that could generalize to clinical care. Consequently, the baseline predictors that were investigated in Paper II were selected on the basis that they should be easily available in public mental health care clinics through standard intake assessment. These factors encompassed demographic variables and factors related to social functioning, comorbidity, illness severity, and the consequences of the anxiety disorder. A review of the research on these factors as predictors of outcome from CBT of panic disorder and social anxiety disorder is presented below.

1.5.2.1. Demographic variables, social functioning and severity

In general, research has indicated that demographics such as age and gender are unrelated to the outcome of CBT. However, there may be differences between the genders and age groups in how they respond to various treatments. Very few studies have investigated these variables as moderators of the treatment outcome of the various formats of CBT as done in this thesis. A common assumption in clinical practice and research trials is that more socially marginalized patients with more severe consequences of their anxiety disorder benefit less from treatment. These patients have more daily stressors and less available social support, which might prevent the utilization of treatment. This may particularly be the case for guided self-help because this treatment is associated with more personal responsibility for completing the treatment tasks. One central research question was whether patients with lower social functioning and higher severity would have a poorer treatment outcome. Previous research on the variables related to social functioning as predictors of the treatment outcome, such as employment status, marital status, having children, education, and having close friends, have generally yielded insignificant or inconsistent findings for CBT of panic disorder and social anxiety disorder (Eskildsen, Hougaard, & Rosenberg, 2010; McCabe & Gifford, 2008; Newman et al., 2006). Research has quite consistently indicated that patients with more severe primary symptoms at baseline have more severe symptoms post-treatment; however, patients tend to improve at the same rate regardless of their status at baseline. Regarding the association between the treatment outcome and other factors that reflect the severity of the disorder, such as pharmacological treatment, prior mental health treatment, and disability, the research is limited and characterized by inconclusive findings for CBT of panic disorder and social anxiety disorder (Eskildsen et al., 2010; McCabe & Gifford, 2008; Newman et al., 2006). The duration of the disorder and/or age of onset is an inconsistent predictor for CBT of

panic disorder (Aaronson et al., 2008; T. A. Brown, Antony, & Barlow, 1995; Hendriks, Keijsers, Kampman, Hoogduin, & Voshaar, 2012; Kampman, Keijsers, Hoogduin, & Hendriks, 2008), and it appears to be unrelated to the outcome of CBT for social anxiety disorder (Borge, Hoffart, & Sexton, 2010; Eskildsen et al., 2010; Newman et al., 2006).

In summary, previous research on CBT of panic disorder and social anxiety disorder indicates no consistent associations between any of these variables related to demographics, social functioning and severity, and the treatment outcome when they are investigated as individual variables. In this thesis, I hypothesized that there could be an additive effect from having clusters of characteristics related to higher severity and lower social functioning that resulted in a poorer treatment outcome. To test these assumptions, two composite variables were created; one that was based on factors related to social functioning and one that was based on factors related to the severity of the anxiety disorder. These composite variables were investigated as predictors and moderators of the treatment outcome.

1.5.2.2. Comorbidity

Both panic disorder and social anxiety disorder are associated with a high prevalence of comorbid mental disorders with approximately half of the patients in clinical samples meeting criteria for a mood or an additional anxiety disorder (T. A. Brown, Campbell, Lehman, Grisham, & Mancill, 2001). Research findings on the association between comorbid depression and the treatment outcome is somewhat equivocal, but a trend indicates that having a comorbid depressive disorder or symptoms are associated with a worse outcome from CBT of both panic disorder and social anxiety disorder (T. A. Brown et al., 1995; Chambless, Renneberg, Gracely, Goldstein, & Fydrich, 2000; Chambless, Tran, & Glass, 1997; Steketee, Chambless, & Tran, 2001). Regarding the association between comorbid

anxiety disorders and the treatment outcome, the findings are inconsistent for CBT of panic disorder (Allen et al., 2010; T. A. Brown et al., 1995; D. M. Clark et al., 1999; Kampman et al., 2008), as well as social anxiety disorder (Eskildsen et al., 2010; Olatunji, Cisler, & Tolin, 2010). Thus, the current research literature on whether and how comorbid depression and anxiety affect the treatment outcome is inconclusive. These diagnostic categories were investigated as predictors and moderators of the treatment outcome in this thesis.

Comorbid personality disorders are also common among patients with panic disorder and those with social anxiety disorder (Friborg, Martinussen, Kaiser, Øvergård, & Rosenvinge, 2013). Presumably, patients with a comorbid cluster C (i.e., avoidant, dependent or compulsive) personality disorder have more avoidance behaviors and less social support. This can make important treatment tasks such as exposure and behavioral experiments more challenging, which can be an obstacle for utilizing the treatment. Previous research on this association has yielded inconsistent findings, but a trend indicates that comorbid personality disorders are associated with a worse treatment outcome (Eskildsen et al., 2010; Feske, Perry, Chambless, Renneberg, & Goldstein, 1996; Kampman et al., 2008; Telch, Kamphuis, & Schmidt, 2011). In Paper II, having a comorbid cluster C personality disorder was investigated as a predictor of the treatment outcome. We expected that this factor would be associated with a poorer outcome across treatment formats and diagnoses.

In summary, in CBT for panic disorder and CBT for social anxiety disorder, the research literature indicates a trend towards a negative association between comorbid depression and personality disorders on one hand and the treatment outcome on the other hand. There is less support for an association between comorbid anxiety disorders and treatment outcome. Comorbidity may have a different association with the treatment outcome of various

treatment formats, and very few studies have investigated these factors as moderators of treatment outcome. Moreover, studies conducted in naturalistic settings may also have more heterogeneity in the sample than studies conducted in research settings, which increases the power to yield significant associations. Therefore, the design of the ATACA study was well suited for investigating these associations.

1.5.2.3. Patient characteristics as predictors of outcome from self-help treatment

Only a small number of studies have investigated the association between baseline predictors and outcome of self-help treatment. Some studies indicate that comorbid depression and anxiety are associated with a poorer outcome of ICBT for social anxiety disorder (Hedman et al., 2012), but not for panic disorder (Andersson, Carlbring, & Grimund, 2008; Nordgreen et al., 2012). Furthermore, Andersson et al. (2008) found cluster C personality disorders to be associated with a worse treatment outcome of ICBT. There are no consistent findings on other patient characteristics as predictors of the treatment outcome of self-help treatment.

In summary, few patient characteristics have consistently been found to be associated with the treatment outcome of various formats of CBT for panic disorder and social anxiety disorder. Clearly, these associations need to be further investigated for both face-to-face CBT and self-help treatment.

1.5.3. Factors associated with the therapy process: Therapists competence and working alliance

The factors associated with the therapy process have traditionally been classified into two broad categories. *Common factors* are elements shared across various theoretical orientations

and therapeutic modalities, and *specific factors* are techniques and procedures specified by a theoretical rationale for a specific treatment approach (Lambert & Barley, 2001). Researchers who emphasize the importance of common factors argue that various bona-fide therapies have marginal or non-existent differences in treatment outcome. In line with this, it is assumed that the factors that are shared across therapies are the most important for explaining the treatment outcome (Norcross, 2002; Norcross & Lambert, 2011; Wampold, 2013; Wampold et al., 1997). From this perspective, the alliance between the patients and the therapists has received the most attention in research (Norcross, 2002). On the other hand, researchers who emphasize specific factors propose that the use of specific therapeutic techniques and procedures are the most important factors in therapy. Consequently, from this perspective, the therapists´ adherence to and competence in performing the specified therapeutic techniques according to a specific treatment model are assumed to be important factors for obtaining a successful treatment outcome (Strunk, Brotman, DeRubeis, & Hollon, 2010).

1.5.3.1. The working alliance.

At a trans-theoretical level, the working alliance is defined as the quality of the emotional bond and the degree of mutual agreement between the patient and therapist on the tasks and goals of the treatment (Bordin, 1994). This factor has consistently been found to be associated with outcome in studies of psychotherapy for various patient groups and treatments based on various theoretic orientations (Horvath, Del Re, Flückiger, & Symonds, 2011). However, the amount of variance in the outcome explained by the alliance is rather moderate, with an average of approximately 5- 7.5% across the meta-analyses (Horvath et al., 2011; Horvath & Symonds, 1991; Martin, Garske, & Davis, 2000). The claimed causal relationship between the alliance and the outcome of psychotherapy has been questioned because most studies on this

topic have not controlled for potential confounding factors (Barber, 2009; Dunn & Bentall, 2007; Elvins & Green, 2008) such as improvement prior to the assessment of the alliance (Feeley, DeRubeis, & Gelfand, 1999; Tang & DeRubeis, 1999) and pre-treatment patient factors (Kazdin & Whitley, 2006). Moreover, the majority of the studies of the effect of the alliance have been on the treatment of patients with depression or mixed diagnoses (Keijsers, Schaap, & Hoogduin, 2000). Only a few studies have examined this relationship in CBT for anxiety disorders. A recent study indicated that a higher quality of the alliance as rated by patients with panic disorder was associated with a better treatment outcome (Huppert et al., 2014). However, other studies have indicated that this association is weaker in the treatment of anxiety disorders than depression (Ramnerö & Öst, 2007; Woody & Adessky, 2002). Obviously, there is a need for studies that examine this relationship in CBT for anxiety disorders while controlling for potential confounding factors.

1.5.3.2. Therapist competence

There is considerably less research on the association between the competence of the therapist and outcome of treatment than research on the alliance. Some studies have indicated that higher therapist competence is associated with a better treatment outcome of CBT for depression (Kuyken & Tsivrikos, 2009; Strunk et al., 2010), but a meta-analytic review indicated no association between therapist competence and treatment outcome when aggregated over various treatment formats and conditions treated (Webb, DeRubeis, & Barber, 2010). However, this meta-analysis was based on a limited number of studies with mostly small sample sizes. Moreover, none of the studies included in this meta-analysis targeted CBT for anxiety disorders. To the best of my knowledge, only two previous studies have directly investigated this relationship in CBT for anxiety disorders. One study indicated

a positive association between therapist competence and treatment outcome in CBT for social anxiety disorder (Ginzburg et al., 2012); however, another found no association between competence ratings and subsequent improvement in CBT for panic disorder (Boswell et al., 2013).

Several limitations related to previous research may explain the heterogeneous findings on this issue. One limitation is that many studies on this topic include only highly competent therapists, which leads to a restriction of range in the competence assessments (Roth, Pilling, & Turner, 2010). Moreover, similar to studies of the association between the alliance and treatment outcome, most studies on the association between competence and outcome have not controlled for confounding factors (Barber, Sharpless, Klostermann, & McCarthy, 2007). The working alliance and therapist competence might be overlapping factors that explain some shared variance in the outcome. However, very few studies and, to the best of my knowledge, no previous study on CBT for anxiety disorders have investigated the association between both of these constructs and treatment outcome.

In summary, research in this field is characterized by few studies that generally encompass a number of limitations. Obviously, there is a need for studies that investigate the effect of the working alliance and therapist competence simultaneously while controlling for other confounding factors in CBT for anxiety disorders.

1.6. Research aims

Three main research aims were addressed in this thesis: 1) to identify non-specific predictors of treatment outcome of CBT regardless of the treatment format (Papers I and II); 2) to investigate the predictors/moderators specifically associated with either face-to-face CBT or

guided self-help for panic disorder and social anxiety disorder (Paper II); and 3) to investigate the associations between therapists' CBT competence as well as the patients' rating of the working alliance and the outcome of face-to-face CBT (Paper III).

2. Methods and results

Because Paper I in the current thesis used different procedures, samples and measures than Papers II and III, the Method and Result section for this article is presented separately. Papers II and III use data from the ATACA project, and the procedures and methods for these two studies are presented together.

2.1. The research project "Assessment and Treatment- Anxiety in Children and Adults" (ATACA).

The research project "Assessment and Treatment- Anxiety in Children and Adults" (ATACA) consisted of two randomized controlled clinical trials (one adult and one children part) on CBT for anxiety disorders. This thesis used data from the adult part of this study and consequently will only this part of the study be presented.

The ATACA study was conducted in western Norway in the period between 2008 and 2012. The adult part comprised 173 patients (69 with a primary diagnosis of panic disorder and 104 with a primary diagnosis of social anxiety disorder). Nine public outpatient mental health clinics participated in the study. The recruitment, assessment, and treatment of the patients were conducted by clinical staff in these clinics. All of the patients were referred to treatment by their general practitioner. The therapists and assessors volunteered to participate and participated as part of their ordinary caseload.

Grants from the Western Norway Regional Health Authority and the Anxiety Disorders Research Network at Haukeland University Hospital, Norway funded the study. The Committees for Medical and Health Research Ethics – Western Norway gave ethical approval for the study. It is registered at www.ClinicalTrials.gov Identifier: NCT00619138.

2.1.1. Procedure and Methods

2.1.1.1. Randomization

The patients were randomized to immediate manualized face-to-face CBT (FtF-CBT) or a CBT-based Stepped Care treatment model that comprised the following three steps: 1) psychoeducation, 2) Internet-delivered CBT (ICBT), and 3) manualized face-to-face CBT. A research coordinator who was not a member of the study team generated the computer blocks randomization and produced sealed envelopes that were opened by an independent assessor at each site after every inclusion. The assessors were blinded for the randomization at the pre-treatment assessment but not for the post- and follow-up assessments because the treatments were conducted at their own clinics.

2.1.1.2. Assessment

The independent assessor at each site did all of the clinical assessments. In total, 13 assessors who were all employed at one of the nine clinics were involved in the study. The assessors participated in a two-day workshop on the use of the SCID-I (First, Spitzer, Gibbon, & Williams, 1997) and SCID-II (First, Spitzer, Gibbon, Williams, & Benjamin, 1994) prior to the start of the study and received bi-monthly supervision throughout the study.

The patients were assessed with the complete SCID I and SCID II and the Clinician Severity Rating scale (CSR) (Di Nardo , Brown , & Barlow 1994) by the assessor. In addition, the

patients completed questionnaires on their primary and secondary symptoms, social and interpersonal problems, illness history, and demographic variables. The patients were assessed before treatment, after each step in the Stepped Care model, and after the immediate FtF-CBT. All of the self-report instruments used in this study have been shown to have good to excellent psychometric characteristics in previous studies (Barlow, 2004; Carlbring, Brunt, et al., 2007; Hedman et al., 2010). A complete overview of the assessment instruments with descriptive statistics, psychometric properties, and time-points for assessments in the ATACA study is provided in tables 1- 4.

2.1.1.3. Treatment

In the immediate FtF-CBT condition, the patients received 12 sessions of face-to-face CBT for panic disorder or social anxiety disorder according to the manuals that were developed for the ATACA study. For panic disorder, the manual was informed by the CBT models developed by D. M. Clark (1986) and Barlow (2004), and the manual for social anxiety disorder was informed by the CBT model developed by D. M. Clark and Wells (1995). The manuals comprised standardized CBT methods for treatment of panic disorder and social anxiety disorder such as psychoeducation, cognitive restructuring, interoceptive and in-vivo exposure, behavioral experiments, and relapse prevention. The Stepped Care model comprised three distinct steps of CBT with increasing intensity and amount of therapist contact. In step 1, *psychoeducation,* the patients met with their therapist for a 1.5 h session that focused on the principles of CBT treatment and basic coping strategies for their primary anxiety diagnosis. Throughout the session, an individualized cognitive case formulation was developed. After the session, the patients were given a pamphlet with a brief summary of the content of the session and a copy of their case formulation. They were told to use this to cope

with their anxiety symptoms during the following two weeks. The patients who did not obtain clinically significant improvement or requested more treatment were stepped up. In step 2, *ICBT,* the patients were given access to Internet-based guided self-help programs for panic disorder or social anxiety disorder developed by Andersson and colleagues (Andersson et al., 2006; Carlbring, Westling, Ljungstrand, Ekselius, & Andersson, 2001). These self-help programs were primarily text-based and consisted of 10 modules for panic disorder and nine modules for social anxiety disorder. Each module comprised information, explanations, and exercises consistent with CBT treatment for these conditions. The patients received access to one new module with a specific theme and goal every week and were recommended to work 4-6 h with each module in the self-help program. At the end of each week, the patient and the therapist had an approximately 10-min telephone conversation according to a brief manual. The focus in this conversation was support, motivation, and practical issues related to working with the self-help program. These telephone conversations were also used to identify potential crises or problems that required immediate attention. If the patients did not obtain a clinically significant change at step 2, they were stepped up. Step 3 was the 12-session face-to-face CBT according to the manual as used in the Immediate FtF-CBT condition.

2.1.1.4. Treatment Integrity

The therapists participated in seven full-day seminars and workshops on the treatments used in the study and conducted one pilot treatment in face-to-face CBT prior to the study treatment phase. Throughout the study, the therapists received bi-weekly supervision from clinical experts in CBT. The primary focus in the training and supervision was on conducting the face-to-face CBT.

2.1.1.5. Outcome assessment

The assessor-rated outcome measure was the CSR for both panic disorder and social anxiety disorder. The self-reported outcome measures for panic disorder were the Body Sensation Questionnaire (BSQ) (Chambless, Caputo, Bright, & Gallagher, 1984), the Agoraphobic Cognitions Questionnaire (ACQ) (Chambless et al., 1984) and the Mobility Inventory-Alone (MI-A) (Chambless, Caputo, Jasin, Gracely, & Williams, 1985)

The self-reported outcome measures for social anxiety disorder were the Social Phobia Scale (SPS) and the Social Interaction Anxiety Scale (SIAS) (Mattick & Clarke, 1998). Descriptive statistics for the diagnostic and outcome assessment is presented in table 1.

2.1.1.6. Baseline Predictors

The baseline socio-demographic characteristics included age, gender, and an index of social functioning that comprised the sum of the following five variables: employment status, education level, marital status, having children, and having close friends.

The baseline illness history/severity factors included the duration of the disorder and an index of severity that comprised the following three variables: previous mental health treatment, use of medication(s) for anxiety and work-disability due to anxiety problems.

The baseline comorbidity included Axis-I comorbidity based on the SCID-I-assessment— comorbid depression (dysthymia or major depressive disorder diagnosis) and comorbid anxiety (any anxiety disorders in addition to the primary one) — and Axis-II comorbidity based on the SCID-II assessment: cluster C personality disorder (avoidant, dependent or compulsive personality disorder). Descriptive statistics for the predictor variables is presented in table 3.

2.1.1.7. Working alliance

The patients evaluated the working alliance from sessions 3 and 8 on the short patient version of the Working Alliance Inventory (WAI-S) (Tracey & Kokotoviz, 1989). Descriptive statistics is presented in table 2.

2.1.1.8. Therapist competence

Three independent raters scored therapist competence from videos of sessions 3 and 8 in the FtF-CBT on a modified version of the Cognitive Therapy Adherence and Competence Scale (CTACS) (Barber, Liese, & Abrams, 2003). This modified scale comprised competence ratings on 16 of the 25 items of the original CTACS and ratings of adherence on six items that reflect key CBT elements in the manual. Descriptive statistics is presented in table 2.

2.1.2. Statistical analyses

The associations between potential predictors and the treatment outcome were investigated in intention to treat multiple regression analyses. These analyses included all of the patients who completed the baseline assessment and were randomized to treatment, and they were conducted in the Analysis of Moment Structures (AMOS) version 21 structural equation modelling software (Arbuckle, 2011). Full information maximum likelihood was used to estimate missing data. This procedure uses all of the available data to estimate the probable values of missing data under the assumption that data are missing at random. In addition, analyses that included only the patients who had at least one outcome assessment after baseline were conducted using the Statistical Package for the Social Sciences (SPSS) version 21 (IBM, 2012).

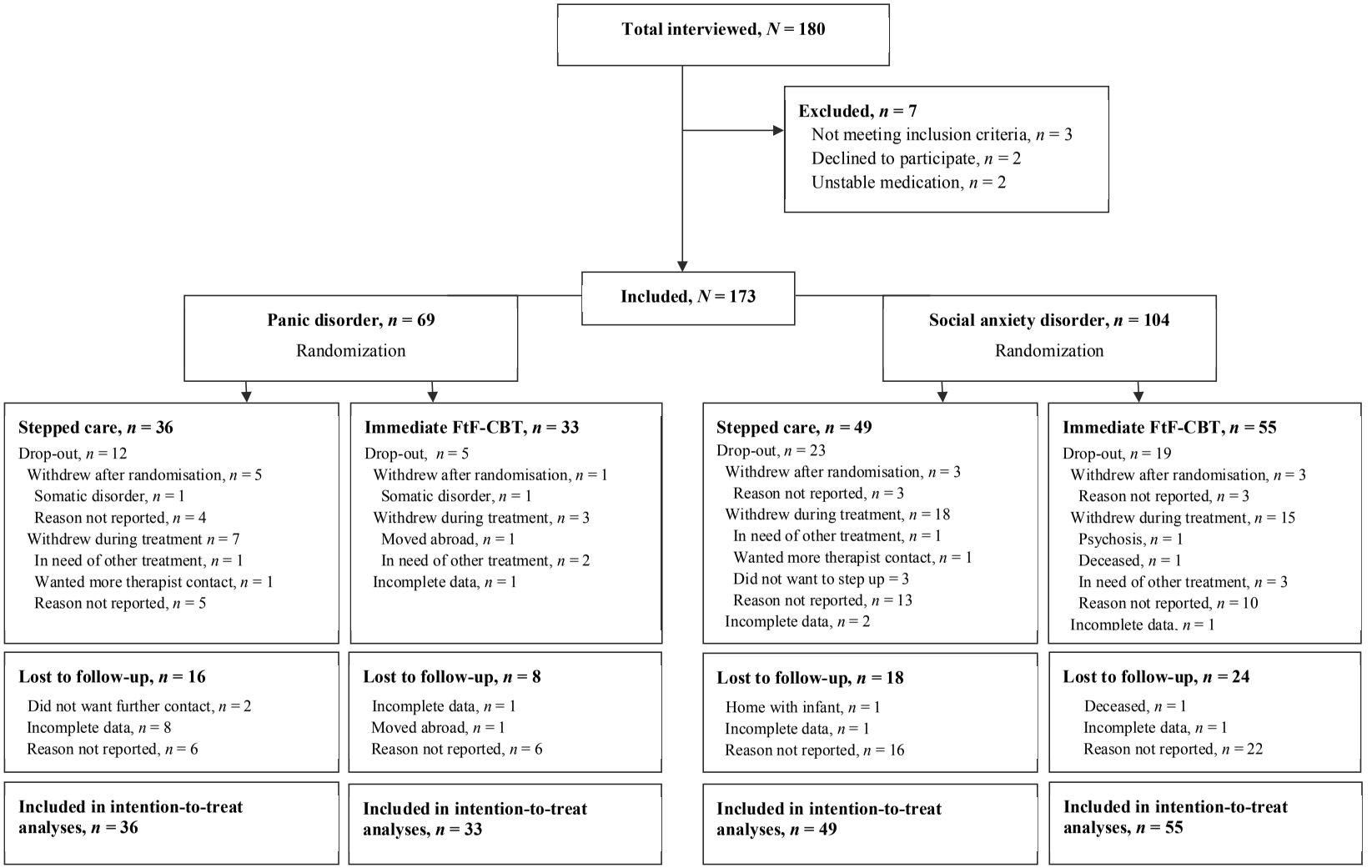
In the multiple regression analyses, the baseline value on the outcome measure was included as a covariate. For each putative predictor, the main effects and the interaction effects of the predictor, the treatment condition, and/or the primary diagnosis on the treatment outcome were investigated. The prior symptom improvement was also entered as a covariate in the analyses that examined the association between therapist competence, the working alliance and the treatment outcome. This was measured by the residual gain score on the self-reported symptoms from baseline to the time of assessment of competence and the alliance.

2.1.3. Summary of the outcome from the ATACA study

The results from the ATACA study indicated that approximately 40% of the patients recovered after treatment. There were no differences between the patients who received Stepped Care and those who received immediate FtF-CBT. Approximately three-quarters of the patients who recovered from the Stepped Care treatment did so after the two first steps (psychoeducation and ICBT). Furthermore, the outcomes on the continuous outcome measures indicated moderate to large-effect sizes and no significant differences between the two treatment models on the primary or secondary outcome measures with one exception: the patients with social anxiety disorder who received Stepped Care treatment had a significantly worse outcome than the patients who received immediate FtF-CBT on the outcome of the CSR (Nordgreen et al., 2014). A total of 28.9% (50/173) of the patients dropped out during treatment. The patients with social anxiety disorder who were allocated to the Stepped Care condition had the highest attrition rate.

Figure 1

Flowchart for the Assessment and Treatment- Anxiety in Children and Adults Study



Note. FtF-CBT= Face-to-face cognitive behavioral therapy. Adapted from Nordgreen et al. (2014)

Table 1

Descriptive Statistics for the Diagnostic and Outcome Assessment Instruments in the ATACA Study

Measure	Description	T1 Mean (*SD*, range)	T3 Mean (*SD*, range)	T4 Stepped Care Mean (*SD*, range)	T4 FtF-CBT Mean (*SD*, range)	Cronbach´s α at baseline	Kappa at baseline
Structured interview for DSM-IV	Diagnostic interview of Axis I (symptom) disorders based on DSM-IV						
Axis I disorders SCID-I	criteria						
Panic disorder							1.0
Social anxiety disorder							1.0
Other anxiety diagnoses							0.70-0.77
Major depressive disorder							1.0
Dysthymic disorder							1.0
Structured interview for DSM-IV	Diagnostic interview of Axis II (Pesonality) disorders based on DSM-IV						
Axis I disorders SCID II	criteria						
Cluster C diagnoses							0.77
Clinician Severity Rating Scale	0 - 8 severity rating of the primary anxiety diagnosis, as the combination of symptom severity and functional impairment.	5.5 (1.1, 4-8)	4.1 (1.7, 0-8)	3.4 (1.7, 0-8)	3.2 (1.4, 0-7)		
Body Sensation Questionnaire[a]	17 items rated on a 0- 4 Likert scale assessing anxiety associated with fear related bodily sensations.	2,9 (0.8, 1.1-4.6)	2.1 (0.8, 1.0-3.6)	2.0 (0.8, 1.0-4.0)	2.1 (0.8, 1.0-4.3)	0.87	
Agoraphobic Cognitions Questionnaire[a]	14 items rated on a 0- 4 Likert scale, assessing the degree or frequency of agoraphobia related thoughts in situations commonly feared in agoraphobia.	2,4 (0.8, 1.1-4.0)	1.84 (0.7, 1.1-3.5)	1.7 (0.7, 1.0-3.6)	1.8 (0.6, 1.1-3.4)	0.90	
Mobility Inventory-Alone[a]	25 items rated on a 0- 4 Likert scale, assessing agoraphobic avoidance when alone in different situations.	2,5 (0.9, 1.0-4.9)	2.2 (1.0, 1.0-4.4)	2.0 (1.0, 1.0-4.5)	1.8 (0.6, 1.1-3.4)	0.95	
Social Phobia Scale[b]	20 items rated on a 1- 5 Likert scale assessing fears of being scrutinized or observed by others in social situations.	2,2 (0.8, 0.0-3.6)	1.5 (0.8, 0.2-3.1)	1.4 (0.9, 0.2-3.6)	1.5 (0.8, 0.1-3.1)	0.91	
Social Interaction Anxiety Scale[b]	20 items rated on a 1- 5 Likert scale assessesing anxiety concerning interpersonal interactions.	2,2 (0.6, 0.6-3.2)	1.7 (0.7, 0.7-3.1)	1.6 (0.7, 0.7-3.3)	1.6 (0.6, 0.6-2.8)	0.82	

Note. T1 = Baseline; T3 = post Internet delivered CBT; T4 = post face-to-face-CBT; T5= 1-year follow up. [a]Only panic disorder. [b]Only social anxiety disorder

Table 2

Descriptive Statistics for the Therapy Process Measures in the ATACA Study

Measure	Description	Early session[a] Mean (*SD*, range)	Late session[b] Mean (*SD*, range)	Cronbach´s α	ICC
Working alliance Inventory-Short	12 items assessing agreement in goals and tasks of the therapy and emotional bond between the patient and the therapist.	5.5 (0.9, 2.8-7.0)	5.7 (0.9, 3.6-7.0)	Early: 0.97 Late: 0.97	
Cognitive Therapy Adherence and Competence Scale	22 items assessing therapists' competence on various aspects relevant to adequate delivery of cognitive therapy and adherence to the therapy manual.	3.5 (1.0, 1.1-5.4)	3.7 (0.9, 1.1-5.5)	Early: 0.85 Late: 0.80	0.92

Note. [a]session 3; [b]session 8

Table 3

Descriptive Statistics for the Predictor Variables in the ATACA Study

Predictor	*M* (*SD,* range) at baseline	*n* (%) at baseline
Age	32.4 (8.9, 19-62)	
Duration[a]	12.5 (10.0, 1-46)	
Female		90 (52.0)
Social functioning high[b]		103 (59.5)
Children		82 (47.4)
Work 15 h. + per week		99 (57.2)
College/ University		60 (34.7)
Married/ Cohabiting		84 (48.6)
Close friends		155 (89.6)
Severity high[c]		96 (55.5)
Psychotropic medication		95 (54.9)
Prior psychiatric specialist treatment		106 (61.3)
Work disability		71 (41.0)
Comorbid depression[d]		80 (46.2)
Comorbid anxiety[e]		70 (40.5)
Comorbid cluster C personality disorder[f]		79 (45.7)

Note. [a]Years with primary anxiety disorder. [b]Composite variable reflecting social functioning. [c]Composite variable reflecting severity of primary anxiety disorder. [d]Comorbid major depressive disorder or dysthymia. [e]Any comorbid anxiety disorder. [f]Comorbid avoidant, dependent or compulsive personality disorder.

Table 4

Time-points for Assessments in the ATACA Study

Assessment Instrument	Baseline	Post Psychoeducation	Module 3 ICBT	Module 8 ICBT	Post ICBT	Session 3 FtF-CBT	Session 8 FtF-CBT	Post FtF-CBT	1-Year follow-up
SCID I	x	x[d]			x			x	x
SCID II	x								x
CSR	x	x			x			x	x
BSQ[a]	x	x	x	x	x	x	x	x	x
ACQ[a]	x	x			x			x	x
MI-A[a]	x				x			x	x
SPS[b]	x	x	x	x	x	x	x	x	x
SIAS[b]	x	x			x			x	x
WAI-S			x	x		x	x		
CTACS						x	x		
Other predictors[c]	x								

Note. SCID-I= Structured interview for DSM-IV Axis I disorders; SCID-I= Structured interview for DSM-IV Axis I disorders; CSR= Clinician Severity Rating; BSQ= Body Sensation Questionnaire; ACQ= Agoraphobic Cognitions Questionnaire; MI-A= Mobility inventory-Alone; SPS= Social Phobia Scale; SIAS= Social Interaction Anxiety Scaled; CTACS= Cognitive Therapy Adherence and Competence Scale; WAI-S= Working Alliance inventory-Short; ICBT= Internet delivered CBT; FtF CBT= Face-to-face CBT.

[a]Only panic disorder. [b]Only social anxiety disorder. [c]Age, gender, duration, social functioning, severity. [d]Only for the primary diagnosis.

2.2. Paper I: "Self-help treatment of anxiety disorders: A meta-analysis and meta-regression of effects and potential moderators"

2.2.1. Research aims

The primary aims of Paper I were to examine the overall efficacy of the self-help treatment of anxiety disorders and the association between the factors related to the treatment format and sample on one hand, and the outcome of treatment on the other hand.

2.2.2. Procedures and methods

Fifty-six separate randomized controlled trials of a self-help treatment for a diagnosed anxiety disorder were included after systematic literature searches in electronic data-bases and hand-searches of reference lists in relevant articles. The pre-treatment, post-treatment, and follow-up scores with standard deviations were extracted for all of the primary and secondary outcome measures. In addition, data concerning potential predictors was extracted. These included the demographics of the sample, the study design, the type of control group, the self-help treatment format, and therapist guidance.

2.2.3. Statistical analyses

In total, the included studies comprised 82 comparisons of a self-help treatment to a control or a comparison group. One between groups' effect size (Hedges *g*) for the primary outcome measures and one between groups effect size for the secondary outcome measures with their 95% confidence intervals were computed for each of these comparisons. Two separate meta-analyses were conducted; one for self-help compared with a placebo or wait-list control group (n=54) and one for self-help compared with a face-to-face treatment (n=28). Potential study level predictors and moderators were investigated through subgroup- and meta-regression

analyses. The meta-analyses were conducted in Comprehensive Meta-Analysis version 2.2.055 (Borenstein, Hedges, Higgins, & Rothstein, 2010) and the subgroup- and meta-regression analyses were conducted in the Comprehensive Meta-Analysis and SPSS version 19.statistical software.

2.2.4. Summary of results

When self-help was compared with a wait-list or placebo, there was an average medium-to-large controlled summary effect size (g= 0.78) on the primary outcome measures and a medium effect size (g= 0.54) on the secondary outcome measures. When self-help treatment was compared with a face-to-face treatment, the results indicated an average small effect size that favored face-to-face treatment on the primary outcome measures (g= -0.20). These results remained stable in the 13 studies that provided follow-up data.

The subgroup analyses and meta-regressions indicated that the studies that used computer- and Internet-based self-help were associated with larger effect sizes, as were the studies with community samples when self-help was compared with a wait-list or placebo. There was a significant difference in the average effect sizes between anxiety disorders, with generalized anxiety disorder, panic disorder, and social anxiety disorder yielding the largest effects. There was no significant association between the type and amount of therapist contact, but there was a non-significant trend that favored studies of guided self-help compared with non-guided self-help.

When self-help was compared with face-to-face-treatment, the findings indicated no differences in the outcome for self-help compared with treatment as usual on average, but there was a small effect that favored face-to-face CBT over self-help.

2.3. Paper II: A stepped care model versus face-to-face cognitive behavioral therapy in the treatment of panic disorder and social anxiety disorder: Predictors and moderators of outcome.

2.3.1. Research aims

To investigate pre-treatment patient characteristics as predictors and moderators of treatment outcome from the ATACA study.

2.3.2. Procedure

The study sample comprised all participants from the adult part of the ATACA study (N=173).

2.3.2.1. Outcome assessment

The CSR and a self-report composite score were used for the entire sample. This composite score was based on the mean value of the z-transformed scores on BSQ, ACQ and MI-A for patients with panic disorder, and SPS and SIAS for patients with social anxiety disorder.

2.3.2.2. Predictors and moderators

Baseline socio-demographic characteristics. Age, gender, and social functioning.
Baseline illness history/ severity. Duration of disorder and severity.
Baseline comorbidity. Comorbid depression and comorbid anxiety based on the SCID-I assessment. Cluster C personality disorder based on the SCID-II assessment.

2.3.3. Statistical analyses

Two series of multiple regression analyses were conducted on clinician-rated and self-reported outcomes. Predictors of outcome for the immediate FtF-CBT were compared with the outcome of the guided self-help component of the Stepped Care model (psychoeducation

+ ICBT) in the first series and to the full Stepped Care model in the second series. For each series, the main and interaction effects for each predictor, treatment condition, and diagnosis were investigated first in separate multiple regression analyses. Subsequently, all of the predictors and moderators that were significant in these analyses were entered simultaneously into multiple regression analyses while controlling for baseline status, diagnosis, and treatment condition.

2.3.4. Summary of results

2.3.4.1. Predictors

Low social functioning and having a comorbid cluster C personality disorder were consistently associated with a worse clinician- and patient-rated outcome across treatment conditions and primary diagnoses. High severity was also associated with a worse outcome across treatment conditions and diagnoses but only for self-reported outcome.

2.3.4.2. Moderators

Diagnosis. When the outcome of immediate FtF-CBT was compared with that of guided self-help, there were significant interaction effects indicating that low severity, as well as having a comorbid anxiety diagnosis, was associated with a better treatment outcome for patients with panic disorder but not patients with social anxiety disorder. The association between low social functioning and a worse treatment outcome was stronger among patients with panic disorder than among those with social anxiety disorder.

Treatment condition. There was a significant interaction effect indicating that the patients with a comorbid depressive disorder had a better outcome from guided self-help than those without a comorbid depressive disorder. This association was not found for patients who were

treated with immediate FtF-CBT. Furthermore, patients with low social functioning had a worse outcome than those with high social functioning from the immediate FtF-CBT, but this was not found among patients completing the full Stepped Care treatment.

2.3.4.3. Multiple regression models including all predictors

All of the non-specific predictors and none of the moderators remained significant in these multiple regression analyses with one exception: the interaction effect between treatment condition and social functioning was still significant when FtF-CBT was compared with the complete Stepped Care model. The predictors and moderators collectively explained 12-16 % of the outcome in the different multiple regression models.

2.4. Paper III: Working alliance and therapist competence as predictors of treatment outcome in cognitive behavioral therapy for social anxiety disorder and panic disorder.

2.4.1. Research aims

This study investigated the association between the working alliance, therapist competence, and outcome of face-to-face CBT for panic disorder and social anxiety disorder.

2.4.2. Procedures and methods

The sample in this study comprised the patients who were randomized to immediate FtF--CBT in the ATACA project and started treatment (N = 88).

2.4.2.1. Outcome measures

The CSR and the self-report questionnaires BSQ for panic disorder and SPS for social anxiety disorder.

2.4.2.2. Predictors

Therapist competence. Independent assessor ratings from sessions 3 and 8 on the modified version of the CTACS.

Working alliance. Patients' ratings from sessions 3 and 8 on the WAI-S.

Residual gain scores from baseline to session 3 and session 8 on the self-reported outcome measures were computed and used to control for symptom improvement prior to the assessment of competence and alliance.

2.4.3. Statistical analyses

Two separate multiple regression analyses were conducted for each of the outcome measures: one investigated the alliance and competence early in treatment and one investigated the alliance and competence late in treatment as predictors of the treatment outcome. Subsequently, these multiple regression analyses were conducted while controlling for the baseline predictors that were found to be associated with the treatment outcome in Paper II.

The therapists were divided into three groups reflecting low, medium, and high alliance and competence. The associations between these groups and the outcomes were investigated using analyses of covariance.

2.4.4. Summary of the results

The results from the multiple regression analyses, as well as the analyses of covariance, indicated that higher competence ratings early in the treatment were associated with better clinician-rated and self-reported outcome. Higher alliance scores late in the treatment were associated with a better self-reported outcome. The associations between competence as well as alliance and outcome remained significant in the multiple regression analyses that also controlled for the three significant baseline predictors from Paper II: social functioning, cluster C personality disorder, and severity.

3. Discussion

The three papers included in this thesis identified several factors associated with the treatment outcome from different formats of CBT for anxiety disorders, including factors related to the treatment format, patient characteristics, and therapy process. The results from Paper I indicated that the setting in which the treatment is provided as well as the format of the self-help program is important for the outcome of self-help treatment. The results from Paper II indicated several baseline characteristics, most importantly factors related to social functioning, severity and comorbid cluster C personality disorders, that were associated with the outcome of CBT provided as manualized face-to-face CBT, guided self-help, and stepped care. The results from Paper III indicated that higher quality of the working alliance and higher therapist competence were related to a better face-to-face CBT outcome.

3.1. Effect of self-help treatment for anxiety disorders

In line with previous meta-analyses, the results from Paper I indicated a medium to large effect favoring self-help over a waiting list or placebo control group. This suggests that self-help treatment has the potential to be an important supplement to other treatments for anxiety disorders. Given that this treatment format is associated with less use of therapist resources, implementation of this treatment in routine mental health care can increase the availability of evidence-based treatment for patients with anxiety disorders.

3.2. Self-help compared with face-to-face treatment

The findings from Paper I indicated that self-help was associated with a similar outcome to unspecialized face-to-face treatment, which is often provided in public mental health clinics; however, the outcome was somewhat poorer than that of face-to-face CBT. In accordance with this, the outcome from the ATACA study, on which papers II and III were based, also favored immediate FtF-CBT over the guided self-help part of the Stepped Care model. This is in line with some other studies comparing mixed self-help treatment formats to face-to-face treatment (Hirai & Clum, 2006) but in contrast to recent studies comparing face-to-face treatment exclusively to computer and Internet-based self-help (Andersson, 2012; Bergstrom et al., 2010; Carlbring et al., 2005; Cuijpers et al., 2010; Cuijpers et al., 2009). Several features of the ATACA study may explain some of the discrepancies in the results compared with these studies. The participating clinicians had little or no prior experience with self-help treatment, and nearly all of the therapists' training and supervision was focused on the FtF-CBT. The findings of a recent study suggest that it is important to train therapists specifically in conducting guided self-help treatment (Paxling et al., 2013). Self-help treatment in this format is a new and unfamiliar treatment form in Norway and is associated with skepticism

among many clinicians (Nordgreen & Havik, 2011). Moreover, in contrast to most other studies on this issue, the self-help treatment was offered as a "low-intensity" treatment in a stepped care model. This may have led some patients and clinicians to infer that this treatment format was inferior to face-to-face CBT, thereby influencing their expectations of its efficiency. Obviously, this highlights the need for more comparative studies of self-help as a stand-alone treatment compared with face-to-face treatment in clinical settings.

When immediate FtF-CBT was compared with the complete Stepped Care model, the differences were less pronounced in clinician-rated outcome and no longer significant in self-reported outcome. This indicates that patients who do not improve from the self-help steps can obtain clinically significant changes when stepping up to a more intensive face-to-face treatment. Approximately two thirds of the patients who obtained clinically significant changes in the Stepped Care model did so as a result of the guided self-help part of the treatment (Nordgreen et al., 2014). This suggests that a stepped care model is potentially more cost-effective than offering face-to-face treatment to all patients. Attrition was relatively high for the Stepped Care model, however, particularly among patients with social anxiety disorder. A majority of these patients dropped out during the ICBT. Some of the patients who dropped out may have preferred face-to-face CBT, as this was the treatment they were referred to originally. In line with this, one may question whether stepped care is the best way to implement low-intensity treatments. A potentially better approach is to match patients immediately to the treatment that they are most likely to benefit from. This further highlight the need to identify patient characteristics associated with the treatment outcome from different treatments, as investigated in this thesis.

3.3. Structural factors associated with the outcome from self-help treatment

As expected, the results from the meta-analysis in Paper I indicated significant heterogeneity in the outcomes between the included studies. Three factors were of particular interest for explaining the variance in the treatment outcome: the treatment format, the setting and sample used in the studies, and, finally, the therapist contact.

Treatment format. This was the first meta-analysis to directly contrast computerized and Internet-based self-help with bibliotherapy. The results indicated that studies on computer- and Internet-based self-help were associated with significantly better treatment outcomes than studies on bibliotherapy. Thus, the results from Paper I further strengthen the evidence base indicating that self-help treatment should be Internet-based.

Setting for treatment: clinical vs. community samples. The findings from Paper I indicated that studies including patients recruited in community samples on average had better outcomes than studies with samples from clinical populations. Furthermore, the results from Paper II indicated that the outcome from the guided self-help part of the Stepped Care model in the ATACA study was somewhat poorer than what has been reported in other studies using similar self-help programs in community settings (Carlbring et al., 2006; Carlbring, Gunnarsdottir, et al., 2007). This may indicate that the patients recruited in clinical settings have more severe and complex anxiety conditions, making them less likely to improve from treatment. Another potential explanation, however, is the differences in procedures for patient recruitment in efficacy and effectiveness trials. Patients participating in efficacy trials actively choose self-help treatment on their own initiative and thus might be more motivated and committed to the treatment, leading to a better treatment outcome. Once more, this reflects the need for better matching procedures for patients to self-help treatment.

A central aspect related to self-help treatment is that it should increase the availability of mental health services. The findings from this thesis may have implications for the identification of which services and settings are best suited for administering self-help treatment. If more patients receive treatment at an earlier stage, the rates of sick-leave and other negative consequences of anxiety disorders may decrease. This argues in favor of delivering self-help treatment in community settings. On the other hand, one can argue that it is important to have clinical resources available if patients are in need of other treatment or in the case of unforeseen crises that need to be handled. This argues in favor of providing this treatment primarily in specialized mental health services. The two countries in which self-help treatment is established as a part of public mental health services, Sweden and Great Britain, share two central features in the implementation of self-help treatment: 1) patients can refer themselves to self-help treatment, and 2) there is a smooth transition from self-help treatment and over to more intensive treatment. In line with these experiences, previous research, and the findings of this thesis, one can argue that one way of implementing self-help treatment is through community health services. However, one should simultaneously seek to tear down possible barriers in the transition between community and secondary specialized mental health services (Thornicroft & Tansella, 2004).

Therapist contact. In contrast to some previous studies and meta-analyses (Hirai & Clum, 2006; Spek et al., 2007), the findings of Paper I indicated only a non-significant trend favoring the outcome from guided self-help over pure self-help. In addition, and contrary to our expectations, the results from the subgroup analyses indicated that the treatment outcome was unrelated to the type and amount of therapist contact provided as part of the self-help treatment. This may indicate that factors related to the relationship between the patients and the therapist is not as important for the outcome of self-help as it is for that of face-to-face

treatment. However, therapist contact may also have been confounded by potential third factors, such as the treatment format or the setting the treatment was provided in. In Paper I, a larger proportion of the computerized programs compared with the bibliotherapy programs were guided, and a larger proportion of the studies on bibliotherapy were conducted with samples from clinical settings. Thus, as both the treatment format and the setting for recruitment and treatment were significantly associated with the treatment outcome, these variables might have suppressed the association between therapist contact and outcome. Another possible explanation is that it is not the therapist contact per se but other factors such as structure, monitoring of progress, and time limits for completing modules that are important for the treatment outcome. These factors are more emphasized in computerized self-help. In line with this, two studies found no differences in the outcomes when comparing an identical treatment manual delivered as guided or unguided self-help for social anxiety disorder (Berger et al., 2011; Furmark et al., 2009). However, some form of therapist contact is likely to be needed for the monitoring of progress and identification of potential crises when implementing self-help treatment in mental health care.

3.4. Patient characteristics associated with the treatment outcome from manualized face-to-face CBT, guided self-help and stepped care

This thesis investigated severity and social functioning as predictors of the treatment outcome based on clusters of characteristics, rather than as individual variables. In accordance with our hypothesis, the findings from Paper II indicated an association between a worse treatment outcome and a congestion of factors related to higher illness severity, such as use of medication, prior mental health treatment, and disability. Similarly, having a clustering of factors related to lower social functioning, such as living alone, being unemployed and having

low education, also predicted a poorer outcome. Previous research on the association between these factors has been characterized by inconsistent or null findings when they have been investigated as individual predictors (Eskildsen et al., 2010; McCabe & Gifford, 2008; Newman et al., 2006). Thus, it appears that none of these variables have a strong enough association with the treatment outcome individually to yield significant associations, but that having a clustering of these characteristics is associated with a worse outcome. This may explain the inconsistent findings in previous research. It should be noted, however, that the association between severity and outcome was only significant for self-reported outcomes; thus, response bias cannot be excluded. The association between severity as well as social functioning and the treatment outcome appears to be somewhat stronger for patients with panic disorder compared with patients with social anxiety disorder. These findings highlight the importance of providing treatment to patients early, before avoidance behaviors and loss of functioning are established, particularly for patients with panic disorder.

Contrary to our expectations, the findings gave some indications that patients with a comorbid depressive disorder had better outcomes than those without comorbid depression when they were treated with guided self-help. This is in line with a recent study indicating that comorbid depression was a positive predictor of the treatment outcome from computerized CBT for mixed anxiety disorders (Campbell-Sills et al., 2012). However, in contrast to our findings, Hedman et al. (2012) found comorbid depression to be associated with a poorer outcome from ICBT of social anxiety disorder. In this thesis, as well as the Campbell-Sills et al. study, the patients were diagnosed with depression based on a diagnostic interview. In contrast, Hedman et al. study used measures of patients' self-reported symptoms as an assessment of depression. This may explain these inconsistent findings. There was no association between comorbid depression and the outcome for patients treated with face-to-face-CBT. This is in line with

some other studies, although the general trend in the research literature indicates a negative association between comorbid depression and the outcome of face-to-face CBT (T. A. Brown et al., 1995; Chambless et al., 2000; Chambless et al., 1997; Steketee et al., 2001). One potential explanation of the finding of a positive association between comorbid depression and outcome from guided self-help may be that guided self-help induces behavioral activation, which has proven effective in the treatment of depression (Cuijpers, Van Straten, & Warmerdam, 2007).

Having a comorbid anxiety disorder was associated with a better outcome among the patients with panic disorder. This is in accordance with the findings reported by T. A. Brown et al. (1995); however, other studies have not found this relationship (D. M. Clark et al., 1999; Kampman et al., 2008). According to earlier research findings, patients treated for panic disorder also experienced improvements in their comorbid anxiety disorders (Tsao, Lewin, & Craske, 1998; Tsao, Mystkowski, Zucker, & Craske, 2002; Tsao, Mystkowski, Zucker, & Craske, 2005). In line with this, a possible explanation of the findings of this thesis is that patients with panic disorder who also improved in terms of their comorbid anxiety disorders benefited more from treatment in total. The findings indicated no association between comorbid anxiety and the treatment outcome for patients with social anxiety disorder. This is in line with most studies on face-to-face CBT (Eskildsen et al., 2010), whereas it is in contrast to findings by Hedman et al. (2012) which indicated that comorbid anxiety was a negative predictor of outcome of guided self-help for social anxiety disorder.

Neither comorbid depression nor anxiety was associated with the treatment outcome when controlling for other predictors. These findings should therefore be interpreted with caution. Nevertheless, comorbid depression and anxiety disorders are apparently not obstacles for a

positive treatment outcome; rather, they may be associated with a better prognosis for some patients. Obviously, these associations should be further investigated in future studies.

The occurrence of a comorbid cluster C personality disorder was consistently associated with a poorer treatment outcome across diagnoses, treatment conditions, and outcome measures. This is in line with the findings of some previous studies (Feske et al., 1996; Steketee et al., 2001; Telch et al., 2011; Van Velzen, Emmelkamp, & Scholing, 1997) but not others (Kampman et al., 2008; Rodebaugh et al., 2004). In the present study, the sample size was relatively large, and there were a high percentage of patients with a comorbid personality disorder. Given that the strength of this association seems to be rather modest, the relatively large power of the ATACA study may have been decisive for detecting a significant association.

In summary, the results from Paper II identified several patient characteristics that were associated with the treatment outcome; however, it gave no clear indications regarding the selection and matching of patients to different treatments. These findings suggest that clinicians should be aware of more socially marginalized patients with more negative consequences from their anxiety disorder, as they may be more resistant to or less capable of utilizing the treatment interventions. This highlights the importance of a thorough pre-treatment assessment in public mental health clinics.

3.5. Process factors associated with the treatment outcome from manualized face-to-face CBT

The results from Paper III indicated that the working alliance as well as the therapists' CBT competence was associated with the treatment outcome in the manualized FtF-CBT for panic

disorder and social anxiety disorder. In line with consistent findings from a large number of previous studies (Horvath et al., 2011), the findings indicated a positive association between the alliance and the treatment outcome. This further strengthens the research indicating that the alliance is also important for the treatment outcome in CBT for anxiety disorders. There was also a positive association between therapists' competence and treatment outcome. In contrast to research on the alliance, the evidence supporting an association between therapist competence and treatment outcome is weak or non-existent (Webb et al., 2010). The lack of findings may be explained by several characteristics associated with many of the previous studies on this issue. Most studies on this association are based on post-hoc analyses from randomized controlled trials. These trials aim to keep variation among therapists at a minimum to secure internal validity, and therapist competence is rated primarily to assess treatment integrity, i.e., if the treatment is conducted as intended (Barber et al., 2007). Therapists in RCTs are therefore often selected based on their prior competence and experience with the treatment, and there is extensive training and supervision of therapists before and throughout the study (Roth et al., 2010). This may lead to a narrow range of competence ratings among the therapists, which reduces the potential to identify a relationship with the treatment outcome. In contrast, in this thesis, there was a rather wide variety in prior experience among the participating therapists. Furthermore, the training of therapists prior to the treatment was quite limited, and there were no predetermined competence criteria for the inclusion of therapists. This resulted in a wider range of competence scores, thus increasing the possibility of detecting a significant association with the treatment outcome. In line with this, some previous research has suggested that the association between therapist effects and treatment outcome is stronger in studies conducted in naturalistic settings than efficacy studies (Baldwin & Imel, 2013). As previously

mentioned, very few studies have investigated this association in the treatment of anxiety disorders. The results from Paper III are in line with the findings reported by Ginzburg et al. (2012), which indicated a positive association between competence and outcome from CBT for social anxiety disorder. These authors found a considerably stronger association between competence and outcome than the study in this thesis. This may be explained by an even wider range in the competence ratings in the Ginzburg et al. study. In addition, the participating patients were characterized as low in terms of difficulty, whereas the characteristics of the sample in the present thesis may indicate that the average patient was more challenging. In contrast to our findings, a large study by Boswell et al. (2013) reported no significant association between competence and outcome in CBT for panic disorder. However, Boswell et al. used therapists with far more experience in CBT and more training and supervision throughout the study. This may explain the discrepancies in the results. The results from Paper III in this thesis add further to an increasing research base on the association between therapist competence and treatment outcome in the treatment of anxiety disorders.

The working alliance was associated with the outcome when rated late in treatment, whereas therapists' competence was associated with the outcome when rated early in treatment. Prior symptom improvement was controlled for before assessing the alliance and the therapist competence. This indicates that the associations between these factors and the treatment outcome in this study were not epiphenomena of prior improvement from treatment. Thus, the present findings indicate that competence and alliance are separate constructs that affect the outcome in different phases of the treatment. The importance of the therapists' competence early in treatment may indicate that a decisive factor for obtaining a good treatment outcome is to provide a clear introduction to the cognitive model of the anxiety disorder as well as

establishing a well-targeted cognitive case conceptualization and the goals for the treatment. These factors have been highlighted as vital for obtaining improvement from psychotherapy (Frank, 1989). The alliance, however, may be more important for consolidating improvement and the patient's commitment to continue working on addressing his or her anxiety, thus having a stronger impact late in treatment. In this phase, the focus in treatment is mainly on conducting exposure and behavioral experiments, which may require more trust and confidence in the therapist. The ratings of the alliance may also reflect a general satisfaction with treatment.

Similar to most other studies on this issue, the average alliance ratings in this thesis were restricted to the higher end of the rating scale. Thus, the findings do not suggest that the alliance is unimportant early in treatment. Rather, a "good enough" alliance appears to be sufficient early in treatment, whereas late in treatment, top ratings of the alliance are associated with a better outcome. There was a non-significant trend in the bivariate correlation between early competence ratings and late alliance ratings ($p=.053$), indicating that the competent delivery of CBT early in treatment is associated to some degree with a subsequent good alliance, but there was no mediation or interaction effect between these two constructs.

The treatment outcome from the ATACA study was somewhat poorer than that of many other studies of CBT for panic disorder and social anxiety disorder. Given that the average competence level among the therapists was only moderate; these poorer outcomes could be a result of suboptimal training and supervision of the therapists. The procedures in the ATACA study were adjusted to adapt to public mental health care. In retrospect, one may speculate whether the limited training and supervision compromised the quality of the treatment, thus

leading to poorer outcomes. Research findings suggest that the training and the supervision of therapists are associated with higher therapist competence as well as better outcomes (G. S. Brown, Lambert, Jones, & Minami, 2005; L. A. Brown et al., 2013; Sholomskas et al., 2005; Simons et al., 2010). The findings of this thesis indicate that therapists in public mental health care should be provided with adequate training and supervision to secure a good outcome for patients. It has been highlighted that the procedures related to the training and supervision of therapists in public mental health care should be more directly informed by procedures and interventions from research trials (Roth & Pilling, 2008; Roth et al., 2010). Thus, the implementation of evidence-based treatments in public mental health care should also include procedures for the training and supervision of therapists.

In summary, the findings from this thesis suggest that therapists in public mental health care should be trained in specific treatment interventions targeted at certain conditions based on procedures from research trials. Furthermore, the competence ratings of therapists should be part of the training and supervision processes. This requires modification of the training and supervision routines and the increased specialization of therapists relative to what is currently common in public mental health care in Norway.

3.6. Implications for clinical practice

The current organization of public mental health care in Norway, as well as that in other countries, leaves the majority of anxiety sufferers untreated. In addition to the major consequences for the functioning and quality of life among those affected, this leads to substantial economic costs and a heavy societal burden (Wittchen, 2002; Wittchen et al., 2011). Thus, as frequently highlighted in the research literature (D. M. Clark, 2011; Shafran et al., 2009), there is a need for the reform of the current organization of the public mental

health care system. The majority of the findings in this thesis are based on treatments in public mental health clinics, and the research questions in all three papers addressed how the procedures and findings from studies conducted in research settings generalize to clinical practice. Thus, the findings from this thesis may give some direction for how evidence-based clinical practice can be implemented in public mental health care. The following implications of this thesis should be noted:

- Self-help treatment is effective in the treatment of anxiety disorders. Internet-based self-help is associated with better outcomes than other formats and is probably more convenient for patients as well as therapists.
- Self-help treatment appears to be somewhat more effective when offered to patients outside the clinic. Furthermore, providing this treatment in community health services may increase availability and lower the threshold for patients to seek help. Consequently, patients with anxiety disorders can be offered treatment at an earlier stage. This will reduce the negative consequences of anxiety disorders and increase the patients' ability to utilize treatment. In line with procedures in countries that have successfully implemented self-help treatment in public mental health care, patients should be offered the ability to refer themselves to this treatment.
- The same patient characteristics appear to be associated with the treatment outcome of self-help treatment and face-to-face CBT. Thus, the predictors investigated in the current thesis do not seem to serve as good selection criteria for which treatment patients should be offered.
- Patients who are more socially marginalized and those with more severe consequences of their anxiety disorder have poorer outcomes from treatment. Thus, treatment in public

mental health care should be preceded by a thorough assessment to identify these patients, and the treatment response of the patients should be systematically monitored.

- The outcomes of CBT provided in different formats appear to be somewhat poorer when offered in clinical settings than in research settings. This may indicate that characteristics associated with research trials, such as structure, control, specificity and focus, are important factors for optimizing treatment procedures. Thus, procedures in clinical practice should be guided by evidence and procedures from research trials.
- Higher therapist competence as well as better working alliance with the patient is associated with a superior treatment outcome. Thus, providing therapists with adequate training and supervision can facilitate the efficacy of mental health treatment. In line with previous recommendations (Roth & Pilling, 2008; Roth et al., 2010), the results of this thesis suggest that the training and supervision of therapists should be guided by procedures from research trials.

3.7. Strengths and limitations

The studies presented in this thesis encompass a number of strengths as well as limitations. The meta-analysis on self-help was based on a relatively large number of studies and included only randomized controlled trials. Furthermore, various formats of self-help treatment were included, which made it possible to compare the outcome from these treatments. On the other hand, the wide inclusion criteria increased the heterogeneity of the sample makes the summary effect size less reliable. Other limitations included the methodological weaknesses of many of the included studies, and there was no rating of the methodological quality of the studies. The studies presented in papers II and III are based on a relatively large N. Furthermore, all recruitment, assessment, and treatment procedures were conducted by clinical staff in public mental health clinics, and all patients were clinically referred.

Similarly, all of the baseline predictors that were investigated are easily available through standard intake assessments. Thus, the external validity and generalizability of the findings were high, and the findings may have more direct implications for the implementation of these treatments in mental health care than those of many other studies. The psychometric properties of all of the assessment instruments that were used were good to excellent, and the treatment outcome was assessed both as clinician-rated outcome and patient self-report. In contrast, many previous studies on this issue have relied exclusively on self-report assessment, which is often associated with floor effects and response bias (Kazdin, 2003a). Several limitations should also be noted. In spite of fairly large sample sizes, they were probably not sufficiently large to draw firm conclusions from predictor and moderator analyses. Another limitation was that the adjustments made to increase the clinical relevance of the study may have compromised the internal validity, particularly related to the procedures for the assessment and the treatment integrity. Furthermore, the attrition rates were fairly high and may have biased the results, even if the missing data were managed using the recommended procedures. In spite of these limitations, the findings from this thesis increases the understanding of factors from various categories that are associated with the outcome from CBT in various formats, and give some directions for treatment of patients with anxiety disorders in mental health care.

4. References

Aaronson, C. J., Shear, M. K., Goetz, R. R., Allen, L. B., Barlow, D. H., White, K. S., . . . Gorman, J. M. (2008). Predictors and time course of response among panic disorder patients treated with cognitive-behavioral therapy. *Journal of Clinical Psychiatry, 69*, 418-424. doi: 35400018336819.0110

Acarturk, C., Cuijpers, P., van Straten, A., & de Graaf, R. (2009). Psychological treatment of social anxiety disorder: a meta-analysis. *Psychological Medicine, 39*, 241-254. doi: 10.1017/s0033291708003590

Allen, L. B., White, K. S., Barlow, D. H., Shear, M. K., Gorman, J. M., & Woods, S. W. (2010). Cognitive-Behavior Therapy (CBT) for Panic Disorder: Relationship of Anxiety and Depression Comorbidity with Treatment Outcome. *Journal of Psychopathology and Behavioral Assessment, 32*, 185-192. doi: 10.1007/s10862-009-9151-3

Alonso, J., Codony, M., Kovess, V., Angermeyer, M. C., Katz, S. J., Haro, J. M., . . . Vilagut, G. (2007). Population level of unmet need for mental healthcare in Europe. *The British journal of psychiatry, 190*, 299-306. doi: 10.1192/bjp.bp.106.022004

American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders: DSM-IV-TR®*: American Psychiatric Pub.

Andersson, G. (2012). Guided internet treatment for anxiety disorders. As effective as face-to-face therapies? *Studies in Health Technology and Informatics, 181*, 3-7. doi: 10.3233/978-1-61499-121-2-3

Andersson, G., Carlbring, P., & Grimund, A. (2008). Predicting treatment outcome in internet versus face to face treatment of panic disorder. *Computers in Human Behavior, 24*, 1790-1801. doi: 10.1016/j.chb.2008.02.003

Andersson, G., Carlbring, P., Holmstrom, A., Sparthan, E., Furmark, T., Nilsson-Ihrfelt, E., . . . Ekselius, L. (2006). Internet-based self-help with therapist feedback and in vivo group exposure for social phobia: A randomized controlled trial. *Journal of Consulting and Clinical Psychology, 74*, 677-686. doi: 10.1037/0022-006x.74.4.677

Andersson, G., Carlbring, P., Ljótsson, B., & Hedman, E. (2013). Guided Internet-Based CBT for Common Mental Disorders. *Journal of Contemporary Psychotherapy, 43*, 223-233. doi: 10.1007/s10879-013-9237-9

Arbuckle, J. L. (2011). IBM SPSS Amos 20 user's guide. *Amos Development Corporation, SPSS Inc*.

Arntz, A., & Van Den Hout, M. (1996). Psychological treatments of panic disorder without agoraphobia: Cognitive therapy versus applied relaxation. *Behaviour Research and Therapy, 34*, 113-121. doi: 10.1016/0005-7967(95)00061-5

Baillie, A. J., & Rapee, R. M. (2004). Predicting who benefits from psychoeducation and self help for panic attacks. *Behaviour Research and Therapy, 42*, 513-527. doi: 10.1016/s0005-7967(03)00157-8

Baldwin, S. A., & Imel, Z. E. (2013). Therapist Effects. Findings and Methods. In M. J. Lambert (Ed.), *Bergin and Garfield's Handbook of Psychotherapy and Behaviour change.* (6th ed., pp. 258-297). Hoboken, New Jersey: Wiley & Sons.

Bandelow, B., Seidler-Brandler, U., Becker, A., Wedekind, D., & Ruther, E. (2007). Meta-analysis of randomized controlled comparisons of psychopharmacological and

psychological treatments for anxiety disorders. *World Journal of Biological Psychiatry, 8*, 175-187. doi: 10.1080/15622970601110273

Barber, J. P. (2009). Toward a working through of some core conflicts in psychotherapy research. *Psychotherapy Research, 19*, 1-12. doi: 10.1080/10503300802609680

Barber, J. P., Liese, B. S., & Abrams, M. J. (2003). Development of the cognitive therapy adherence and competence scale. *Psychotherapy Research, 13*, 205-221. doi: 10.1093/ptr/kpg019

Barber, J. P., Sharpless, B. A., Klostermann, S., & McCarthy, K. S. (2007). Assessing intervention competence and its relation to therapy outcome: A selected review derived from the outcome literature. *Professional Psychology: Research and Practice., 38*, 493-500. doi: 10.1037/0735-7028.38.5.493

Barlow, D. H. (2004). *Anxiety and its Disorders. The nature and treatment of anxiety and panic.* (2 ed.). New York: The Guilford Press.

Barlow, D. H., Gorman, J. M., Shear, M. K., & Woods, S. W. (2000). Cognitive-behavioral therapy, imipramine, or their combination for panic disorder. *JAMA: the journal of the American Medical Association, 283*, 2529-2536.

Beck, A. T., Rush, A. J., Shaw, B. F., & Emery, G. (1979). *Cognitive therapy of depression.* New York: Guilford.

Beck, J. S. (2011). *Cognitive behavior therapy: Basics and beyond*: Guilford Press.

Beidel, D. C., & Turner, S. M. (2007). *Shy children, phobic adults: Nature and treatment of social anxiety disorder*: American Psychological Association Washington, DC.

Bennett-Levy, J., Richards, D., Farrand, P., Christensen, H., & Griffiths, K. (2010). *Oxford guide to low intensity CBT interventions*: Oxford University Press.

Bennett-Levy, J., Richards, D. A., & Farrand, P. (2010). Low intensity CBT interventions: a revolution in mental healthcare *Oxford Guide to Low Intensity CBT Interventions* (pp. 3): Oxford University Press.

Berger, T., Caspar, F., Richardson, R., Kneubuhler, B., Sutter, D., & Andersson, G. (2011). Internet-based treatment of social phobia: A randomized controlled trial comparing unguided with two types of guided self-help. *Behaviour Research and Therapy, 49*, 158-169. doi: 10.1016/j.brat.2010.12.007

Berger, T., Hohl, E., & Caspar, F. (2009). Internet-Based Treatment for Social Phobia: A Randomized Controlled Trial. *Journal of Clinical Psychology, 65*, 1021-1035. doi: 10.1002/jclp.20603

Bergstrom, J., Andersson, G., Ljotsson, B., Ruck, C., Andreewitch, S., Karlsson, A., . . . Lindefors, N. (2010). Internet-versus group-administered cognitive behaviour therapy for panic disorder in a psychiatric setting: a randomised trial. *Bmc Psychiatry, 10*. doi: 10.1186/1471-244x-10-54

Bordin, E. S. (1994). Theory and Research on the Therapeutic Working Alliance: New Directions. In A. O. Horvath & L. S. Greenberg (Eds.), *The Working Alliance. Theory Research and Practice* (pp. 13- 37). New York: John Wiley & Sons Inc.

Borenstein, M., Hedges, L., Higgins, J., & Rothstein, H. (2010). Comprehensive Meta-analysis (Version 2.2.055). Englewood NJ: Biostat, .

Borge, F. M., Hoffart, A., & Sexton, H. (2010). Predictors of outcome in residential cognitive and interpersonal treatment for social phobia: Do cognitive and social dysfunction moderate treatment outcome? *Journal of Behavior Therapy and Experimental Psychiatry, 41*, 212-219. doi: 10.1016/j.jbtep.2010.01.005

Boswell, J. F., Gallagher, M. W., Sauer-Zavala, S. E., Bullis, J., Gorman, J. M., Shear, M. K., . . . Barlow, D. H. (2013). Patient Characteristics and Variability in Adherence and Competence in Cognitive-Behavioral Therapy for Panic Disorder. *Journal of Consulting and Clinical Psychology, 81*, 443-454. doi: 10.1037/a0031437

Botella, C., Gallego, M. J., Garcia-Palacios, A., Guillen, V., Banos, R. M., Quero, S., & Alcaniz, M. (2010). An Internet-Based Self-Help Treatment for Fear of Public Speaking: A Controlled Trial. *Cyberpsychology Behavior and Social Networking, 13*, 407-421. doi: 10.1089/cyber.2009.0224

Bower, P., & Gilbody, S. (2005). Stepped care in psychological therapies: access, effectiveness and efficiency - Narrative literature review. *British Journal of Psychiatry, 186*, 11-17. doi: 10.1192/bjp.186.1.11

Brooner, R. K., Kidorf, M. S., King, V. L., Stoller, K. B., Neufeld, K. J., & Kolodner, K. (2007). Comparing adaptive stepped care and monetary-based voucher interventions for opioid dependence. *Drug and Alcohol Dependence, 88*, S14-S23. doi: 10.1016/j.drugalcdep.2006.12.006

Brown, G. S., Lambert, M. J., Jones, E. R., & Minami, T. (2005). Identifying highly effective psychotherapists in a managed care environment. *American Journal of Managed Care, 11*, 513-520.

Brown, L. A., Craske, M. G., Glenn, D. E., Stein, M. B., Sullivan, G., Sherbourne, C., . . . Rose, R. D. (2013). CBT Competence in Novice Therapists Improves Anxiety Outcomen. *Depression and Anxiety, 30*, 97-115. doi: 10.1002/da.22027

Brown, T. A., Antony, M. M., & Barlow, D. H. (1995). Diagnostic comorbidity in panic disorder: Effect on treatment outcome and course of comorbid diagnoses following

treatment. *Journal of Consulting and Clinical Psychology, 63*, 408-418. doi: 10.1037/0022-006X.63.3.408

Brown, T. A., Campbell, L. A., Lehman, C. L., Grisham, J. R., & Mancill, R. B. (2001). Current and lifetime comorbidity of the DSM-IV anxiety and mood disorders in a large clinical sample. *Journal of Abnormal Psychology, 110*, 585-599. doi: 10.1037/0021-843X.110.4.585

Burke, K. C., Burke Jr, J. D., Regier, D. A., & Rae, D. S. (1990). Age at onset of selected mental disorders in five community populations. *Archives of General Psychiatry, 47*, 511-518. doi: 10.1001/archpsyc.1990.01810180011002

Butler, A. C., Chapman, J. E., Forman, E. M., & Beck, A. T. (2006). The empirical status of cognitive-behavioral therapy: A review of meta-analyses. *Clinical Psychology Review, 26*, 17-31. doi: 10.1016/j.cpr.2005.07.003

Campbell-Sills, L., Sherbourne, C. D., Roy-Byrne, P., Craske, M. G., Sullivan, G., Bystritsky, A., . . . Stein, M. B. (2012). Effects of Co-Occurring Depression on Treatment for Anxiety Disorders: Analysis of Outcomes From a Large Primary Care Effectiveness Trial. *Journal of Clinical Psychiatry, 73*, 1509-1516. doi: 10.4088/JCP.12m07955

Cape, J., Whittington, C., Buszewicz, M., Wallace, P., & Underwood, L. (2010). Brief psychological therapies for anxiety and depression in primary care: meta-analysis and meta-regression. *Bmc Medicine, 8*, 38. doi: 38.10.1186/1741-7015-8-38

Carels, R. A., Wott, C. B., Young, K. M., Gumble, A., Darby, L. A., Oehlhof, M. W., . . . Koball, A. (2009). Successful weight loss with self-help: A stepped-care approach. *Journal of behavioral medicine, 32*, 503-509. doi: 10.1007/s10865-009-9221-8

Carlbring, P., Bohman, S., Brunt, S., Buhrman, M., Westling, B. E., Ekselius, L., & Andersson, G. (2006). Remote treatment of panic disorder: A randomized trial of

Internet-based cognitive behavior therapy supplemented with telephone calls. *American Journal of Psychiatry, 163*, 2119-2125. doi: 10.1176/appi.ajp.163.12.2119

Carlbring, P., Brunt, S., Bohman, S., Austin, D., Richards, J., Öst, L.-G., & Andersson, G. (2007). Internet vs. paper and pencil administration of questionnaires commonly used in panic/agoraphobia research. *Computers in Human Behavior, 23*, 1421-1434. doi: 10.1016/j.chb.2005.05.002

Carlbring, P., Ekselius, L., & Andersson, G. (2003). Treatment of panic disorder via the Internet: a randomized trial of CBT vs. applied relaxation. *Journal of Behavior Therapy and Experimental Psychiatry, 34*, 129-140. doi: 10.1016/s0005-7916(03)00026-0

Carlbring, P., Gunnarsdottir, M., Hedensjo, L., Andersson, G., Ekselius, L., & Furmark, T. (2007). Treatment of social phobia: randomised trial of internet-delivered cognitive-behavioural therapy with telephone support. *British Journal of Psychiatry, 190*, 123-128. doi: 10.1192/bjp.bp.105.020107

Carlbring, P., Nilsson-Ihrfelt, E., Waara, J., Kollenstam, C., Buhrman, M., Kaldo, V., . . . Andersson, G. (2005). Treatment of panic disorder: live therapy vs. self-help via the Internet. *Behaviour Research and Therapy, 43*, 1321-1333. doi: 10.1016/j.brat.2004.10.002

Carlbring, P., Westling, B. E., Ljungstrand, P., Ekselius, L., & Andersson, G. (2001). Treatment of panic disorder via the Internet: A randomized trial of a self-help program. *Behavior Therapy, 32*, 751-764. doi: 10.1016/S0005-7894(01)80019-8

Chambless, D. L., Caputo, G. C., Bright, P., & Gallagher, R. (1984). Assessment of fear of fear in agoraphobics- The Body Sensations Questionnaire and the Agoraphobic

Cognitions Questionnaire. *Journal of Consulting and Clinical Psychology, 52*, 1090-1097. doi: 10.1037/0022-006x.52.6.1090

Chambless, D. L., Caputo, G. C., Jasin, S. E., Gracely, E. J., & Williams, C. (1985). The Mobility Inventory for Agoraphobia. *Behaviour Research and Therapy, 23*, 35-44. doi: 10.1016/0005-7967(85)90140-8

Chambless, D. L., Renneberg, B., Gracely, E. J., Goldstein, A. J., & Fydrich, T. (2000). Axis I and II comorbidity in agoraphobia: prediction of psychotherapy outcome in a clinical setting. *Psychotherapy Research, 10*(3), 279-295. doi: 10.1093/ptr/10.3.279

Chambless, D. L., Tran, G. Q., & Glass, C. R. (1997). Predictors of response to cognitive-behavioral group therapy for social phobia. *Journal of Anxiety Disorders, 11*, 221-240. doi: 10.1016/s0887-6185(97)00008-x

Clark, D. A., & Beck, A. T. (2010). *Cognitive therapy for anxiety disorders* (1. ed.). NY. USA: New Guilford Press.

Clark, D. M. (1986). A cognitive approach to panic. *Behaviour Research and Therapy, 24*. doi: 10.1016/0005-7967(86)90011-2

Clark, D. M. (1995). Cognitive therapy in the treatment of anxiety disorders. *Clinical Neuropharmacology, 18*, S27-S37.

Clark, D. M. (2011). Implementing NICE guidelines for the psychological treatment of depression and anxiety disorders: The IAPT experience. *International Review of Psychiatry, 23*. doi: 10.3109/09540261.2011.606803

Clark, D. M., Ehlers, A., Hackmann, A., McManus, F., Fennell, M., Grey, N., . . . Wild, J. (2006). Cognitive therapy versus exposure and applied relaxation in social phobia: A randomized controlled trial. *Journal of Consulting and Clinical Psychology, 74*, 568-578. doi: 10.1037/0022-006x.74.3.568

Clark, D. M., Ehlers, A., McManus, F., Hackmann, A., Fennell, M., Campbell, H., . . . Louis, B. (2003). Cognitive therapy versus fluoxetine in generalized social phobia: A randomized placebo-controlled trial. *Journal of Consulting and Clinical Psychology, 71*, 1058-1067. doi: 10.1037/0022-006x.71.6.1058

Clark, D. M., Salkovskis, P. M., Hackmann, A., Middleton, H., Anastasiades, P., & Gelder, M. (1994). A comparison of cognitive therapy, applied relaxation and Imipramine in the treatment of panic disorder. *British Journal of Psychiatry, 164*, 759-769. doi: 10.1192/bjp.164.6.759

Clark, D. M., Salkovskis, P. M., Hackmann, A., Wells, A., Ludgate, J., & Gelder, M. (1999). Brief cognitive therapy for panic disorder: A randomized controlled trial. *Journal of Consulting and Clinical Psychology, 67*, 583-589. doi: 10.1037//0022-006x.67.4.583

Clark, D. M., Salkovskis, P. M., Ost, L. G., Breitholtz, E., Koehler, K. A., Westling, B. E., . . . Gelder, M. (1997). Misinterpretation of body sensations in panic disorder. *Journal of Consulting and Clinical Psychology, 65*, 203-213. doi: 10.1037//0022-006x.65.2.203

Clark, D. M., & Wells, A. (1995). A cognitive model of social phobia. In R. G. Heimberg, M. R. Liebowitz, D. A. Hope & F. R. Schneier (Eds.), *Social phobia. Diagnosis, assessment, and treatment.* (pp. 69-93). New York, NY, USA: The Guilford Press.

Cuijpers, P., Donker, T., van Straten, A., Li, J., & Andersson, G. (2010). Is guided self-help as effective as face-to-face psychotherapy for depression and anxiety disorders? A systematic review and meta-analysis of comparative outcome studies. *Psychological Medicine, 40*, 1943-1957. doi: 10.1017/S0033291710000772

Cuijpers, P., Marks, I. M., van Straten, A., Cavanagh, K., Gega, L., & Andersson, G. (2009). Computer-aided psychotherapy for anxiety disorders: a meta-analytic review.

Cognitive Behavior Therapy, 38, 66-82. doi: 912391320 [pii] 10.1080/16506070802694776

Cuijpers, P., & Schuurmans, J. (2007). Self-help interventions for anxiety disorders: An overview. [Article]. *Current Psychiatry Reports August, 9*, 284-290.

Cuijpers, P., Sijbrandij, M., Koole, S. L., Andersson, G., Beekman, A. T., & Reynolds, C. F. (2013). The efficacy of psychotherapy and pharmacotherapy in treating depressive and anxiety disorders: a meta-analysis of direct comparisons. *World Psychiatry, 12*, 137-148.

Cuijpers, P., Van Straten, A., & Warmerdam, L. (2007). Behavioral activation treatments of depression: A meta-analysis. *Clinical Psychology Review, 27*, 318-326. doi: 10.1016/j.cpr.2006.11.001

Dammen, T., Ekeberg, Ø., Arnesen, H., & Friis, S. (1999). The detection of panic disorder in chest pain patients. *General Hospital Psychiatry, 21*, 323-332. doi: 10.1016/S0163-8343(99)00037-7

Di Nardo , P. A., Brown , T. A., & Barlow , D. H. (1994). *Anxiety Disorders Interview Schedule for DSM-IV: Lifetime version (ADIS-IV-L).* San Antonio, TX, USA.: Psychological Corporation.

Donker, T., Griffiths, K. M., Cuijpers, P., & Christensen, H. (2009). Psychoeducation for depression, anxiety and psychological distress: a meta-analysis. *Bmc Medicine, 7*. doi: 10.1186/1741-7015-7-79

Dunn, G., & Bentall, R. (2007). Modelling treatment-effect heterogeneity in randomized controlled trials of complex interventions (psychological treatments). *Statistics in Medicine, 26*, 4719-4745. doi: 10.1002/sim.2891

Edlund, M. J., & Swann, A. C. (1987). The economic and social costs of panic disorder. *Hospital and Community Psychiatry, 38*, 1277.

Elvins, R., & Green, J. (2008). The conceptualization and measurement of therapeutic alliance: An empirical review. *Clinical Psychology Review, 28*, 1167-1187. doi: 10.1016/j.cpr.2008.04.002

Eskildsen, A., Hougaard, E., & Rosenberg, N. K. (2010). Pre-treatment patient variables as predictors of drop-out and treatment outcome in cognitive behavioural therapy for social phobia: A systematic review. *Nordic Journal of Psychiatry, 64*, 94-105. doi: 10.3109/08039480903426929

Faravelli, C., Paterniti, S., & Scarpato, A. (1995). 5-year prospective, naturalistic follow-up study of panic disorder. *Comprehensive Psychiatry, 36*, 271-277. doi: 10.1016/S0010-440X(95)90072-1

Feeley, M., DeRubeis, R. J., & Gelfand, L. A. (1999). The temporal relation of adherence and alliance to symptom change in cognitive therapy for depression. *Journal of Consulting and Clinical Psychology, 67*, 578-582. doi: 10.1037/0022-006X.67.4.578

Fehm, L., Pelissolo, A., Furmark, T., & Wittchen, H.-U. (2005). Size and burden of social phobia in Europe. *European Neuropsychopharmacology, 15*, 453-462. doi: 10.1016/j.euroneuro.2005.04.002

Feske, U., Perry, K. J., Chambless, D. L., Renneberg, B., & Goldstein, A. J. (1996). Avoidant personality disorder as a predictor for treatment outcome among generalized social phobics. *Journal of personality disorders, 10*, 174-184. doi: 10.1521/pedi.1996.10.2.174

First, M., Spitzer, R., Gibbon, M., Williams, J., & Benjamin, L. (1994). Structured Clinical Interview for DSM-IV Axis II personality disorders (SCID II). New York: Biometric Research Department.

First, M., Spitzer, R. L., Gibbon, M., & Williams, J. B. W. (1997). Structured Clinical Interview for DSM-IV Axis I disorders (SCID I). New York: Biometric Research Department.

Frank, J. (1989). Non- specific aaspects of Treatment: The view of a psychotherapist. In M. Shepherd & N. Sartorius (Eds.), *Non- specific Aspects of Treatment* (pp. 95- 114). Stuttgart, Germany: HAns Huber Publishers.

Friborg, O., Martinussen, M., Kaiser, S., Øvergård, K. T., & Rosenvinge, J. H. (2013). Comorbidity of personality disorders in anxiety disorders: a meta-analysis of 30 years of research. *Journal of Affective Disorders, 145*, 143-155. doi: 10.1016/j.jad.2012.07.004

Furmark, T., Carlbring, P., Hedman, E., Sonnenstein, A., Clevberger, P., Bohman, B., . . . Andersson, G. (2009). Guided and unguided self-help for social anxiety disorder: randomised controlled trial. *Br J Psychiatry, 195*, 440-447. doi: 10.1192/bjp.bp.108.060996

Ginzburg, D. M., Bohn, C., Hofling, V., Weck, F., Clark, D. M., & Stangier, U. (2012). Treatment specific competence predicts outcome in cognitive therapy for social anxiety disorder. *Behaviour Research and Therapy, 50*, 747-752. doi: 10.1016/j.brat.2012.09.001

Goodwin, R. D., Faravelli, C., Rosi, S., Cosci, F., Truglia, E., de Graaf, R., & Wittchen, H. U. (2005). The epidemiology of panic disorder and agoraphobia in Europe. *European Neuropsychopharmacology, 15*, 435-443. doi: 10.1016/j.euroneuro.2005.04.006

Gould, R. A., & Clum, G. A. (1993). A Metaanalysis of self-help treatment approaches. *Clinical Psychology Review, 13*, 169-186. doi: 10.1016/0272-7358(93)90039-O

Gould, R. A., Otto, M. W., & Pollack, M. H. (1995). A meta-analysis of treatment outcome for panic disorder. *Clinical Psychology Review, 15*, 819-844. doi: 10.1016/0272-7358(95)00048-8

Haaga, D. A. (2000). Introduction to the special section on stepped care models in psychotherapy. *Journal of Consulting and Clinical Psychology, 68*, 547-548. doi: 10.1037/0022-006X.68.4.547

Haug, T., Nordgreen, T., Öst, L. G., & Havik, O. E. (2012). Self-help treatment of anxiety disorders: A meta-analysis and meta-regression of effects and potential moderators. *Clinical Psychology Review, 32*, 425-445. doi: 10.1016/j.cpr.2012.04.002

Hawton, K. E., Salkovskis, P. M., Kirk, J. E., & Clark, D. M. (1989). *Cognitive behaviour therapy for psychiatric problems: A practical guide*: Oxford University Press.

Hedman, E., Andersson, E., Ljotsson, B., Andersson, G., Schalling, M., Lindefors, N., & Ruck, C. (2012). Clinical and genetic outcome determinants of Internet- and group-based cognitive behavior therapy for social anxiety disorder. *Acta Psychiatrica Scandinavica, 126*, 126-136. doi: 10.1111/j.1600-0447.2012.01834.x

Hedman, E., Ljótsson, B., Rück, C., Furmark, T., Carlbring, P., Lindefors, N., & Andersson, G. (2010). Internet administration of self-report measures commonly used in research on social anxiety disorder: A psychometric evaluation. *Computers in Human Behavior, 26*, 736-740. doi: 10.1016/j.chb.2010.01.010

Hendriks, G. J., Keijsers, G. P. J., Kampman, M., Hoogduin, C. A. L., & Voshaar, R. C. O. (2012). Predictors of outcome of pharmacological and psychological treatment of late-

life panic disorder with agoraphobia. *International Journal of Geriatric Psychiatry, 27*, 146-150. doi: 10.1002/gps.2700

Hirai, M., & Clum, G. A. (2006). A meta-analytic study of self-help interventions for anxiety problems. *Behavior Therapy, 37*, 99-111. doi: 10.1016/j.beth.2005.05.002

Hoffart, A., Borge, F.-M., Sexton, H., & Clark, D. M. (2009). Change Processes in Residential Cognitive and Interpersonal Psychotherapy for Social Phobia: A Process-Outcome Study. *Behavior Therapy, 40*. doi: 10.1016/j.beth.2007.12.003

Hofmann, S. G. (2004). Cognitive mediation of treatment change in social phobia. *Journal of Consulting and Clinical Psychology, 72*, 392-399. doi: 10.1037/0022-006X.72.3.392

Hofmann, S. G., & Barlow, D. H. (2002). Social phobia (social anxiety disorder). *Anxiety and its disorders: The nature and treatment of anxiety and panic, 2*, 454-476.

Hofmann, S. G., & Smits, J. A. J. (2008). Cognitive-behavioral therapy for adult anxiety disorders: A meta-analysis of randomized placebo-controlled trials. *Journal of Clinical Psychiatry, 69*, 621-632. doi: 10.4088/JCP.v69n0415

Hollon, S. D., & Beck, A. T. (2013). Cognitive and Cognitive Behavioral Therapies. In J. L. Michael (Ed.), *Bergin and Garfield's Handbook of Psychotherapy and Behavior Change* (6th ed.): John Wiley & Sons.

Holmbeck, G. N. (1997). Toward terminological, conceptual, and statistical clarity in the study of mediators and moderators: Examples from the child-clinical and pediatric psychology literatures. *Journal of Consulting and Clinical Psychology, 65*, 599-610. doi: 10.1037/0022-006X.65.4.599

Horvath, A. O., Del Re, A. C., Flückiger, C., & Symonds, D. (2011). Alliance in individual psychotherapy. *Psychotherapy, 48*, 9-16. doi: 2011-04924-003 [pii] 10.1037/a0022186

Horvath, A. O., & Symonds, B. D. (1991). Relation between working alliance and outcome in psychotherapy- A meta- analysis. *Journal of Counseling Psychology, 38*, 139-149. doi: 10.1037/0022

Houghton, S., & Saxon, D. (2007). An evaluation of large group CBT psycho-education for anxiety disorders delivered in routine practice. *Patient education and counseling, 68*, 107-110. doi: 10.1016/j.pec.2007.05.010

Huppert, J. D., Kivity, Y., Barlow, D. H., Gorman, J. M., Shear, M. K., & Woods, S. W. (2014). Therapist effects and the outcome–alliance correlation in cognitive behavioral therapy for panic disorder with agoraphobia. *Behaviour Research and Therapy, 52*, 26-34. doi: 10.1016/j.brat.2013.11.001

IBM. (2012). IBM SPSS Statistics for Windows, Version 21.0. . Armonk, NY: IBM Corp.

Kampman, M., Keijsers, G. P. J., Hoogduin, C. A. L., & Hendriks, G. J. (2008). Outcome Prediction of Cognitive Behaviour Therapy for Panic Disorder: Initial Symptom Severity is Predictive for Treatment Outcome, Comorbid Anxiety or Depressive Disorder, Cluster C Personality Disorders and Initial Motivation Are Not. *Behavioural and Cognitive Psychotherapy, 36*, 99-112. doi: 10.1017/s1352465807004018

Kazdin, A. E. (2003a). Assessment methods and strategies. In R. Pascal (Ed.), *Research design in clinical psychology* (4th ed., pp. 355-407). Boston, US: Allyn and Bacon.

Kazdin, A. E. (2003b). Selection of the research problem and design. In R. Pascal (Ed.), *Research Design in Clinical Psychology* (4th ed., pp. 110-147). Boston, US: Allyn and Bacon.

Kazdin, A. E., & Whitley, M. K. (2006). Pretreatment social relations, therapeutic alliance, and improvements in parenting practices in parent management training. *Journal of Consulting and Clinical Psychology, 74*, 346-355. doi: 10.1037/0022-006x.74.2.346

Keijsers, G. P. J., Schaap, C., & Hoogduin, C. A. L. (2000). The impact of interpersonal patient and therapist behavior on outcome in cognitive-behavior therapy - A review of empirical studies. *Behavior Modification, 24*, 264-297. doi: 10.1177/0145445500242006

Kessler, D., Lloyd, K., Lewis, G., & Gray, D. P. (1999). Cross sectional study of symptom attribution and recognition of depression and anxiety in primary care. *BMJ: British Medical Journal, 318*(7181), 436.

Kessler, R. C., Berglund, P., Demler, O., Jin, R., Merikangas, K. R., & Walters, E. E. (2005). Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the national comorbidity survey replication. *Archives of General Psychiatry, 62*, 593-602. doi: 10.1001/archpsyc.62.6.593

Kessler, R. C., Chiu, W. T., Demler, O., Merikangas, K. R., & Walters, E. E. (2005). Prevalence, severity, and comorbidity of 12-month DSM-IV disorders in the national comorbidity survey replication. . *Archives of General Psychiatry, 62*, 617-627. doi: 10.1001/archpsyc.62.6.617

Kessler, R. C., Demler, O., Frank, R. G., Olfson, M., Pincus, H. A., Walters, E. E., . . . Zaslavsky, A. M. (2005). Prevalence and treatment of mental disorders, 1990 to 2003. *New England Journal of Medicine, 352*(24), 2515-2523. doi: 10.1056/NEJMsa043266

Kessler, R. C., McGonagle, K. A., Zhao, S., Nelson, C. B., Hughes, M., Eshleman, S., . . . Kendler, K. S. (1994). Lifetime and 12-month prevalence of DSM-III-R psychiatric disorders in the United States: results from the National Comorbidity Survey. *Archives of General Psychiatry, 51*, 8-19. doi: 10.1001/archpsyc.1994.03950010008002

Klosko, J. S., Barlow, D. H., Tassinari, R., & Cerny, J. A. (1990). A comparison of alprazolam and behavior therapy in treatment of panic disorder. *Journal of Consulting and Clinical Psychology, 58*, 77-84. doi: 10.1037/0022-006X.58.1.77

Kraemer, H., Wilson, G., Fairburn, C. G., & Agras, W. (2002). Mediators and moderators of treatment effects in randomized clinical trials. *Archives of General Psychiatry, 59*, 877-883. doi: 10.1001/archpsyc.59.10.877

Kringlen, E., Torgersen, S., & Cramer, V. (2001). A Norwegian Psychiatric Epidemiological Study. *American Journal of Psychiatry, 158*, 1091-1098. doi: 10.1176/appi.ajp.158.7.1091

Kuyken, W., & Tsivrikos, D. (2009). Therapist Competence, Comorbidity and Cognitive-Behavioral Therapy for Depression. *Psychotherapy and Psychosomatics, 78*, 42-48. doi: 10.1159/000172619

Lambert, M. J. (2013). The efficacy and effectiveness of psychotherapy. In M. J. Lambert (Ed.), *Bergin and Garfield's Handbook of Psychotherapy and Behavior Change* (6th ed., pp. 169-218): John Wiley & Sons.

Lambert, M. J., & Barley, D. E. (2001). Research summary on the therapeutic relationship and psychotherapy outcome. *Psychotherapy: Theory, Research, Practice, Training, 38*(4), 357-361. doi: 10.1037/0033-3204.38.4.357

Lebow, J. (2013). *Research for the psychotherapist: From science to practice*: Routledge.

Leichsenring, F., Salzer, S., Beutel, M. E., Herpertz, S., Hiller, W., Hoyer, J., . . . Poehlmann, K. (2013). Psychodynamic therapy and cognitive-behavioral therapy in social anxiety disorder: a multicenter randomized controlled trial. *American Journal of Psychiatry, 170*, 759-767. doi: 10.1176/appi.ajp.2013.12081125

Leon, A. C., Olfson, M., & Portera, L. (1997). Service utilization and expenditures for the treatment of panic disorder. *General Hospital Psychiatry, 19*, 82-88. doi: 10.1016/S0163-8343(96)00154-5

Leon, A. C., Portera, L., & Weissman, M. M. (1995). The social costs of anxiety disorders. *The British journal of psychiatry*.

Lewis, C., Pearce, J., & Bisson, J. I. (2012). Efficacy, cost-effectiveness and acceptability of self-help interventions for anxiety disorders: systematic review. *British Journal of Psychiatry, 200*, 15-21. doi: 10.1192/bjp.bp.110.084756

Marrs, R. W. (1995). A meta-analysis of bibliotherapy studies. *American Journal of Community Psychology, 23*, 843-870. doi: 10.1007/BF02507018

Martin, D. J., Garske, J. P., & Davis, M. K. (2000). Relation of the therapeutic alliance with outcome and other variables: a meta-analytic review. *Jornal of Consulting and Clinical Psychology, 68*, 438-450. doi: 10.1037/0022-006X.68.3.438

Mattick, R. P., & Clarke, J. C. (1998). Development and validation of measures of social phobia scrutiny fear and social interaction anxiety. *Behaviour Research and Therapy, 36*, 455-470. doi: 10.1016/s0005-7967(97)10031-6

McCabe, R. E., & Gifford, S. (2008). Psychological treatment of panic disorder and agoraphobia. In M. M. Anthony & M. B. Stein (Eds.), *Oxford Handbook of Anxiety and Related Disorders* (pp. 308-320). Oxford, UK: Oxford University Press.

Mitte, K. (2005). A meta-analysis of the efficacy of psycho-and pharmacotherapy in panic disorder with and without agoraphobia. *Journal of Affective Disorders, 88*, 27-45. doi: 10.1016/j.jad.2005.05.003

Mortberg, E., Clark, D. M., Sundin, O., & Wistedt, A. A. (2007). Intensive group cognitive treatment and individual cognitive therapy vs. treatment as usual in social phobia: a

randomized controlled trial. *Acta Psychiatrica Scandinavica, 115*. doi: 10.1111/j.1600-0447.2006.00839.x

Newman, M. G., Crits-Christoph, P., Gibbons, M. B. C., & Erickson, T. M. (2006). Participant factors in treating anxiety disorders. In L. G. Castonguay & L. E. Beutler (Eds.), *Principles of therapeutic change that work* (1. ed., pp. 121-154). New York, USA: Oxford University Press.

Newman, M. G., Szkodny, L. E., Llera, S. J., & Przeworski, A. (2011). A review of technology-assisted self-help and minimal contact therapies for anxiety and depression: Is human contact necessary for therapeutic efficacy? *Clinical Psychology Review, 31*, 89-103. doi: 10.1016/j.cpr.2010.09.008

NICE. (2013). Social Anxiety Disorder: Recognition, Assessment and Treatment. Clinical guideline 159., from http://guidance.nice.org.uk/cg159

Norcross, J. C. (2002). *Psychotherapy Relationships That Work* (J. C. Norcross Ed.). New York: Oxford University Press.

Norcross, J. C., & Lambert, M. J. (2011). Psychotherapy Relationships That Work II. *Psychotherapy, 48*, 4-8. doi: 10.1037/a0022180

Nordgreen, T., Haug, T., Öst, L. G., Andersson, G., Carlbring, P., Kvale, G., . . . Havik, O. E. (2014). *Stepped Care Versus Routine Cognitive Behaviour Therapy for Panic Disorder and Social Anxiety Disorder: A Randomised Controlled Trial in Secondary Care Mental Health Services*. Manuscript submitted for publication.

Nordgreen, T., & Havik, O. E. (2011). Use of self- help materials for anxiety and depression in mental helath services: A national survey of psychologists in Norway. *Professional Psychology: Research and Practice, 42*, 185- 191. doi: 10.1037/a0022729

Nordgreen, T., Havik, O. E., Öst, L. G., Furmark, T., Carlbring, P., & Andersson, G. (2012). Outcome predictors in guided and unguided self-help for social anxiety disorder. *Behaviour Research and Therapy, 50*, 13-21. doi: 10.1016/j.brat.2011.10.009

Norton, P. J., & Price, E. C. (2007). A meta-analytic review of adult cognitive-behavioral treatment outcome across the anxiety disorders. *Journal of Nervous and Mental Disease, 195*, 521-531. doi: 10.1097/01.nmd.0000253843.70149.9a

O'Donohue, W. T., & Draper, C. (2011). The case for evidence-based stepped care as part of a reformed delivery system *Stepped Care and e-Health* (pp. 1-16): Springer.

Olatunji, B. O., Cisler, J. M., & Deacon, B. J. (2010). Efficacy of Cognitive Behavioral Therapy for Anxiety Disorders: A Review of Meta-Analytic Findings. *Psychiatric Clinics of North America, 33*, 557-577. doi: 10.1016/j.psc.2010.04.002

Olatunji, B. O., Cisler, J. M., & Tolin, D. F. (2010). A meta-analysis of the influence of comorbidity on treatment outcome in the anxiety disorders. *Clinical Psychology Review, 30*, 642-654. doi: 10.1016/j.cpr.2010.04.008

Palmqvist, B., Carlbring, P., & Andersson, G. (2007). Internet-delivered treatments with or without therapist input: does the therapist factor have implications for efficacy and cost? *Expert Rev Pharmacoecon Outcomes Res, 7*, 291-297. doi: 10.1586/14737167.7.3.291

Paxling, B., Lundgren, S., Norman, A., Almlöv, J., Carlbring, P., Cuijpers, P., & Andersson, G. (2013). Therapist Behaviours in Internet-Delivered Cognitive Behaviour Therapy: Analyses of E-Mail Correspondence in the Treatment of Generalized Anxiety Disorder. *Behavioural and Cognitive Psychotherapy, 41*, 280-289. doi: 10.1017/S1352465812000240

Ramnerö, J., & Öst, L. G. (2007). Therapists' and clients' perception of each other and working alliance in the behavioral treatment of panic disorder and agoraphobia. *Psychotherapy Research, 17*, 328-337. doi: 10.1080/10503300600650852

Reger, M. A., & Gahm, G. A. (2009). A Meta-Analysis of the Effects of Internet- and Computer-Based Cognitive-Behavioral Treatments for Anxiety. *Journal of Clinical Psychology, 65*, 53-75. doi: 10.1002/jclp.20536

Regier, D. A., Rae, D. S., Narrow, W. E., Kaelber, C. T., & Schatzberg, A. F. (1998). Prevalence of anxiety disorders and their comorbidity with mood and addictive disorders. *The British journal of psychiatry, 173*, 24-28.

Reid, R., Pipe, A., Higginson, L., Johnson, K., D'Angelo, M. S., Cooke, D., & Dafoe, W. (2003). Stepped care approach to smoking cessation in patients hospitalized for coronary artery disease. *Journal of Cardiopulmonary Rehabilitation and Prevention, 23*, 176-182. doi: 10.1097/00008483-200305000-00003

Rodebaugh, T. L., Holaway, R. M., & Heimberg, R. G. (2004). The treatment of social anxiety disorder. *Clinical Psychology Review, 24*, 883-908. doi: 10.1016/j.cpr.2004.07.007

Rosen, G. M. (1987). Self- help treatment books and the commercialization of psychotherapy. *American Psychologist, 42*, 46-51. doi: 10.1037/0003-066X.42.1.46

Roth, A. D., & Pilling, S. (2008). Using an Evidence-Based Methodology to Identify the Competences Required to Deliver Effective Cognitive and Behavioural Therapy for Depression and Anxiety Disorders. *Behavioural and Cognitive Psychotherapy, 36*, 129-147. doi: 10.1017/s1352465808004141

Roth, A. D., Pilling, S., & Turner, J. (2010). Therapist Training and Supervision in Clinical Trials: Implications for Clinical Practice. *Behavioural and Cognitive Psychotherapy, 38*, 291-302. doi: 10.1017/s1352465810000068

Rummel-Kluge, C., Pitschel-Walz, G., & Kissling, W. (2009). Psychoeducation in anxiety disorders: Results of a survey of all psychiatric institutions in Germany, Austria and Switzerland. *Psychiatry Research, 169*, 180-182. doi: 10.1016/j.psychres.2008.10.016

Seekles, W., van Straten, A., Beekman, A., van Marwijk, H., & Cuijpers, P. (2009). Stepped care for depression and anxiety: from primary care to specialized mental health care: a randomised controlled trial testing the effectiveness of a stepped care program among primary care patients with mood or anxiety disorders. *Bmc Health Services Research, 9*. doi: 9010.1186/1472-6963-9-90

Seekles, W., van Straten, A., Beekman, A., van Marwijk, H., & Cuijpers, P. (2011). Stepped care treatment for depression and anxiety in primary care. a randomized controlled trial. *Trials, 12*. doi: 171 10.1186/1745-6215-12-171

Shafran, R., Clark, D. M., Fairburn, C. G., Arntz, A., Barlow, D. H., Ehlers, A., . . . Wilson, G. T. (2009). Mind the gap: Improving the dissemination of CBT. *Behaviour Research and Therapy, 47*, 902-909. doi: 10.1016/j.brat.2009.07.003

Sharp, D. M., Power, K. G., Simpson, R. J., Swanson, V., Moodie, E., Anstee, J. A., & Ashford, J. J. (1996). Fluvoxamine, placebo, and cognitive behaviour therapy used alone and in combination in the treatment of panic disorder and agoraphobia. *Journal of Anxiety Disorders, 10*, 219-242. doi: Doi 10.1016/0887-6185(96)00008-4

Sholomskas, D. E., Syracuse-Siewert, G., Rounsaville, B. J., Ball, S. A., Nuro, K. F., & Carroll, K. M. (2005). We don't train in vain: a dissemination trial of three strategies

of training clinicians in cognitive-behavioral therapy. *Journal of Consulting and Clinical Psychology, 73*, 106. doi: 10.1037/0022-006X.73.1.106

Siegel, L., Jones, W. C., & Wilson, J. O. (1990). Economic and life consequences experienced by a group of individuals with panic disorder. *Journal of Anxiety Disorders, 4*, 201-211. doi: Doi 10.1016/0887-6185(90)90012-X

Siev, J., & Chambless, D. L. (2007). Specificity of treatment effects: Cognitive therapy and relaxation for generalized anxiety and panic disorders. *Journal of Consulting and Clinical Psychology, 75*, 513-522. doi: 10.1037/0022-006x.75.4.513

Simons, A. D., Padesky, C. A., Montemarano, J., Lewis, C. C., Murakami, J., Lamb, K., . . . Beck, A. T. (2010). Training and Dissemination of Cognitive Behavior Therapy for Depression in Adults: A Preliminary Examination of Therapist Competence and Client Outcomes. *Journal of Consulting and Clinical Psychology, 78*, 751-756. doi: 10.1037/a0020569

Simpson, R. J., Kazmierczak, T., Power, K. G., & Sharp, D. M. (1994). Controlled comparison of the characteristics of patients with panic disorder. *British Journal of General Practice, 44*, 352-356.

Spek, V., Cuijpers, P., Nykicek, I., Riper, H., Keyzer, J., & Pop, V. (2007). Internet-based cognitive behaviour therapy for symptoms of depression and anxiety: a meta-analysis. *Psychological Medicine, 37*, 319-328. doi: 10.1017/s0033291706008944

Stangier, U., Heidenreich, T., Peitz, M., Lauterbach, W., & Clark, D. M. (2003). Cognitive therapy for social phobia: individual versus group treatment. *Behaviour Research and Therapy, 41*. doi: 10.1016/s0005-7967(02)00176-6

Stangier, U., Schramm, E., Heidenreich, T., Berger, M., & Clark, D. M. (2011). Cognitive Therapy vs Interpersonal Psychotherapy in Social Anxiety Disorder A Randomized

Controlled Trial. *Archives of General Psychiatry, 68*, 692-700. doi: 10.1001/archgenpsychiatry.2011.67

Stein, M. B., Fuetsch, M., Müller, N., Höfler, M., Lieb, R., & Wittchen, H.-U. (2001). Social anxiety disorder and the risk of depression: a prospective community study of adolescents and young adults. *Archives of General Psychiatry, 58*(3), 251-256.

Steketee, G., Chambless, D. L., & Tran, G. Q. (2001). Effects of axis I and II comorbidity on behavior therapy outcome for obsessive-compulsive disorder and agoraphobia. *Comprehensive Psychiatry, 42*, 76-86. doi: 10.1053/comp.2001.19746

Stewart, R. E., & Chambless, D. L. (2009). Cognitive-Behavioral Therapy for Adult Anxiety Disorders in Clinical Practice: A Meta-Analysis of Effectiveness Studies. *Journal of Consulting and Clinical Psychology, 77*, 595-606. doi: 10.1037/a0016032

Strunk, D. R., Brotman, M. A., DeRubeis, R. J., & Hollon, S. D. (2010). Therapist Competence in Cognitive Therapy for Depression: Predicting Subsequent Symptom Change. *Journal of Consulting and Clinical Psychology, 78*, 429-437. doi: 10.1037/a0019631

Tang, T. Z., & DeRubeis, R. J. (1999). Sudden gains and critical sessions in cognitive-behavioral therapy for depression. *Journal of Consulting and Clinical Psychology, 67*, 894-904. doi: 10.1037/0022-006X.67.6.894

Taylor, S., Abramowitz, J. S., & McKay, D. (2012). Non-adherence and non-response in the treatment of anxiety disorders. *Journal of Anxiety Disorders, 26*, 583-589. doi: 10.1016/j.janxdis.2012.02.010

Telch, M. J., Kamphuis, J. H., & Schmidt, N. B. (2011). The effects of comorbid personality disorders on cognitive behavioral treatment for panic disorder. *Journal of Psychiatric Research, 45*, 469-474. doi: 10.1016/j.jpsychires.2010.08.008

Thornicroft, G., & Tansella, M. (2004). Components of a modern mental health service: a pragmatic balance of community and hospital care Overview of systematic evidence. *The British journal of psychiatry, 185*, 283-290. doi: 10.1192/bjp.185.4.283

Tolin, D. F. (2010). Is cognitive-behavioral therapy more effective than other therapies? A meta-analytic review. *Clinical Psychology Review, 30*, 710-720. doi: 10.1016/j.cpr.2010.05.003

Tolin, D. F., Diefenbach, G. J., Maltby, N., & Hannan, S. (2005). Stepped care for obsessive-compulsive disorder: A pilot study. *Cognitive and Behavioral Practice, 12*, 403-414. doi: Doi 10.1016/S1077-7229(05)80068-9

Tracey, T. J., & Kokotoviz, A. M. (1989). Factor structure of the Working Alliance Inventory. *1*, 207-210. doi: 10.1037/1040-3590.1.3.207

Tsao, J. C. I., Lewin, M. R., & Craske, M. G. (1998). The effects of cognitive-behavior therapy for panic disorder on comorbid conditions. *Journal of Anxiety Disorders, 12*, 357-371. doi: 10.1016/s0887-6185(98)00020-6

Tsao, J. C. I., Mystkowski, J. L., Zucker, B. G., & Craske, M. G. (2002). Effects of cognitive-behavioral therapy for panic disorder on comorbid conditions: Replication and extension. *Behavior Therapy, 33*, 493-509. doi: 10.1016/s0005-7894(02)80013-2

Tsao, J. C. I., Mystkowski, J. L., Zucker, B. G., & Craske, M. G. (2005). Impact of cognitive-behavioral therapy for panic disorder on comorbidity: a controlled investigation. *Behaviour Research and Therapy, 43*, 959-970. doi: 10.1016/j.brat.2004.11.013

van't Veer-Tazelaar, P. J., van Marwijk, H. W., van Oppen, P., van Hout, H. P., van der Horst, H. E., Cuijpers, P., . . . Beekman, A. T. (2009). Stepped-care prevention of anxiety and depression in late life: a randomized controlled trial. *Arch Gen Psychiatry, 66*, 297-304. doi: 10.1001/archgenpsychiatry.2008.555

Van Velzen, C. J. M., Emmelkamp, P. M. G., & Scholing, A. (1997). The impact of personality disorders on behavioral treatment outcome for social phobia. *Behaviour Research and Therapy, 35*, 889-900. doi: 10.1016/S0005-7967(97)00052-1

Von Korff, M., & Moore, J. C. (2001). Stepped care for back pain: activating approaches for primary care. *Annals of Internal Medicine, 134*, 911-917. doi: 10.7326/0003-4819-134-9_Part_2-200105011-00016

Wampold, B. E. (2013). The good, the bad, and the ugly: A 50-year perspective on the outcome problem. *Psychotherapy, 50*, 16-24. doi: 10.1037/a0030570

Wampold, B. E., Mondin, G. W., Moody, M., Stich, F., Benson, K., & Ahn, H. N. (1997). A meta-analysis of outcome studies comparing bona fide psychotherapies: Empirically, "all must have prizes". *Psychological Bulletin, 122*, 203-215. doi: 10.1037/0033-2909.122.3.203

Wang, P. S., Aguilar-Gaxiola, S., Alonso, J., Angermeyer, M. C., Borges, G., Bromet, E. J., . . . Wells, J. E. (2007). Use of mental health services for anxiety, mood, and substance disorders in 17 countries in the WHO world mental health surveys. *The Lancet, 370*, 841-850. doi: 10.1016/S0140-6736(07)61414-7

Wang, P. S., Berglund, P., Olfson, M., Pincus, H. A., Wells, K. B., & Kessler, R. C. (2005). Failure and delay in initial treatment contact after first onset of mental disorders in the National Comorbidity Survey Replication. *Archives of General Psychiatry, 62*, 603-613. doi: 10.1001/archpsyc.62.6.603

Wang, P. S., Lane, M., Olfson, M., Pincus, H. A., Wells, K. B., & Kessler, R. C. (2005). Twelve-month use of mental health services in the United States: results from the National Comorbidity Survey Replication. *Archives of General Psychiatry, 62*, 629-640. doi: 10.1001/archpsyc.62.6.629

Webb, C. A., DeRubeis, R. J., & Barber, J. P. (2010). Therapist Adherence/Competence and Treatment Outcome: A Meta-Analytic Review. *Journal of Consulting and Clinical Psychology, 78*, 200-211. doi: 10.1037/a0018912

Weisz, J. R., & Addis, M. E. (2006). The research- practice tango and other choreographic challenges: Using and testing evidemce based psychotherapies in clinical care settings. In C. D. Goodheart, A. E. Kazdin & R. J. Sternberg (Eds.), *Evidence-based psychotherapy: where practice and research meet* (pp. 179- 206). Washington, DC: American Psychological Association.

Westen, D., Novotny, C. A., & Thompson-Brenner, H. (2004). The empirical status of empirically supported psychotherapies: Assumptions, findings, and reporting in controlled clinical trials. *Psychological Bulletin, 130*, 631-663. doi: 10.1037/0033-2909.130.4.631

Wittchen, H. U. (2002). Prevalence and cost of anxiety disorders in the new century. *European Neuropsychopharmacology, 12, Supplement 3*, 156-157. doi: 10.1016/S0924-977X(02)80107-9

Wittchen, H. U., Fuetsch, M., Sonntag, H., Müller, N., & Liebowitz, M. (1999). Disability and quality of life in pure and comorbid social phobia – Findings from a controlled study. *European Psychiatry, 14*, 118-131. doi: 10.1016/S0924-9338(99)80729-9

Wittchen, H. U., Jacobi, F., Rehm, J., Gustavsson, A., Svensson, M., Jönsson, B., . . . Faravelli, C. (2011). The size and burden of mental disorders and other disorders of the brain in Europe 2010. *European Neuropsychopharmacology, 21*, 655-679. doi: 10.1016/j.euroneuro.2011.07.018

Woody, S. R., & Adessky, R. S. (2002). Therapeutic alliance, group cohesion, and homework compliance during cognitive-behavioral group treatment of social phobia. *Behavior Therapy, 33*, 5-27. doi: 10.1016/s0005-7894(02)80003-x

Öst, L. G. (2008). Cognitive behavior therapy for anxiety disorders: 40 years of progress. *Nordic Journal of Psychiatry, 62*, 5-10. doi: 10.1080/08039480802315590

Öst, L. G., Thulin, U., & Ramnerö, J. (2004). Cognitive behavior therapy vs exposure in vivo in the treatment of panic disorder with agrophobia. *Behaviour Research and Therapy, 42*, 1105-1127. doi: 10.1016/j.brat.2003.07.004

Öst, L. G., & Westling, B. E. (1995). Applied relaxation vs cognitive behavior therapy in the treatment of panic disorder. *Behaviour Research and Therapy, 33*, 145-158.