Internet-based self-help for social anxiety disorder and panic disorder

Factors associated with effect and use of self-help

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

2011

Scientific environment

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

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Acknowledgements

First of all I want to thank my main supervisor professor Odd E. Havik for his guidance, support, and patience for the last four years. Your door has been open at all times, something I have appreciated – and needed. And it is amazing how other doors tend to open when I refer to you as my supervisor. I look forward to collaborate with you on future projects.

I also want to thank my co-supervisor Lars-Göran Öst for valuable and useful feedback throughout the PhD project. Thank you for being by my side.

This thesis is a part of the project "Assessment and Treatment – Anxiety in Children and Adults (ATACA), adult part", the Anxiety Disorder Research Network, Haukeland University Hospital, Norway.

Odd, Lars-Göran and the rest of the ATACA-group have been my home-base during the PhD project. It wouldn't been such a good base without Thomas, Gro-Janne, Krister, Charlotte, Stine, Børge, Jon, Kikki, Bente, Gerd B, Gerd K, Tone, Ole-Johan, Thorbjørn, Ingvar, Lars-Göran, Einar, and Odd. Thank you all for interesting discussions, useful feedback, nice travels, and good lunches.

A second home-base for the last four years has been The Bergen Group for Treatment Research, Department of Clinical Psychology, and Graduate School of Clinical and Developmental Psychology. Here I have enjoyed the company of fellow PhD candidates, professors, researchers, and staff. A special thank you goes to Børge who generously has shared his many talents and good company.

Moreover, I want to thank all those who participated in the studies.

Most recently I enjoyed a wonderful time as a visiting scholar at the University of Virginia. I am grateful to associate professors Lee M. Ritterband and Frances P. Thorndike and the rest of the E-health group for letting me be a part of their team. Thank you all for an inspiring stay and good laughs -hope to see you soon!

I also would like to thank highly skilled co-authors in Norway and Sweden for collaboration on the papers in this thesis. Together with anonymously reviewers of the papers, the present thesis is very much influenced by your input and comments. You have all been good teachers on how to conduct and report research.

My special thanks go to all those good people who have cared for and inspired me, a special thank goes to Nina and Bjørg. And then to my beloved family Erling, Jens and Lotte; my PhD was partly motivated by spending more time with you. Even though it at times has become the opposite, being a PhD candidate has given our family a

flexibility that we all have enjoyed. It makes me thankful to see Jens and Lotte grow and thrive at home, at Haydom, Tanzania, and in Charlottesville, Virginia. And to my dearest husband and best friend Erling; thank you for introducing me to research, for being my co-adventurer, and believing in me every day.

People are sometimes surprised when I tell them that I could do a PhD one more time. Obviously it is because of all the people mentioned above.

Bergen, May 16, 2011

List of papers

Paper I Nordgreen, T., Standal, B., Mannes, H., Haug, T., Sivertsen, B., Carlbring, P., Andersson, G., Heiervang, E., & Havik, O. E. (2010). Guided self-help via internet for panic disorder: Dissemination across countries. *Computers in Human Behavior*, *26*, 592-596.

Paper II Nordgreen, T., Havik, O. E., Öst, L-G, Furmark, T., Carlbring, P., & Andersson. G. (submitted)[1]. Outcome predictors in guided and unguided self-help for social anxiety disorder.

[1] A revised version of this manuscript has been accepted for publication in *Behaviour Research and Therapy.*

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

Abstract

Studies have documented the effect of self-help interventions for social anxiety disorder and panic disorder, and self-help interventions have been proposed as a way to improve access to psychological interventions for these disorders. However, heterogeneous treatment effects from self-help have been reported and there is a need to study factors associated with this heterogeneity. The aim of present thesis is to investigate factors associated with the treatment effect and use of self-help with a special emphasis on guided self-help via the Internet for social anxiety disorder and panic disorder.

Methods: Paper I was based on an open pre-post design that through a benchmarking strategy examined the transportability of guided self-help via the Internet for panic disorder. Analyses of predictors of outcome were included. Paper II examined predictors of outcome among patients who had received guided self-help via Internet (n = 149) or unguided self-help (n = 96) for social anxiety disorder. Predictors of adherence, diagnosis-free status, and reliable change were examined. Paper III presented a survey of the knowledge and use of self-help among psychologists working in mental health services, and examined factors associated with use of self-help.

Results: In Paper I, we found that guided self-help via the Internet for panic disorder remained effective in a new setting with therapists inexperienced with self-help. However, there was a trend that treatment effects were less than those reported from the developers' research clinic. Predictor-analyses indicated that a higher age of patients predicted greater improvement, whereas longer duration of panic disorder predicted less improvement from guided self-help via Internet for panic disorder.

In Paper II, severity of social anxiety symptoms before treatment was associated with maintaining a social anxiety diagnose after treatment, whereas comorbid symptoms were not. Moreover, results indicate that patients who perceived unguided self-help for

social anxiety as a credible treatment had similar effects to those who had received guided self-help.

In Paper III it was found that the majority of professionals working in mental health services had used self-help with their patients. However, self-help was mainly used as an adjunct and not as an alternative to face-to-face contact.

Conclusions: With the methodological considerations and limitations in mind, the present thesis gives further support to self-help for social anxiety disorder and panic disorder as an effective treatment across different settings and patient populations. The results also indicate that symptom severity, treatment credibility, and professionals use of self-help as an alternative to face-to-face contact needs to be taken into account in future research and dissemination efforts.

Sammendrag (Abstract in Norwegian)

Studier tyder på at selvhjelp er en effektiv behandling for sosial angst og panikklidelse, og selvhjelp har blitt foreslått som en måte å øke tilgangen til psykologisk behandling for disse lidelsene. Ettersom det i forskningslitteraturen er rapportert om ulike effekter av selvhjelp er det behov for kunnskap om faktorer som påvirker effekten og bruken av selvhjelp. Målet med avhandlingen er å identifisere faktorer forbundet med effekt og bruk av selvhjelp, med spesiell vekt på veiledet selvhjelp via Internett for sosial angst og panikklidelse.

Metode: Artikkel I var en åpen, pre-post studie som undersøkte effekten av veiledet selvhjelp via Internett for panikklidelse og inkluderte undersøkelse av prediktorer for symptombedring. Artikkel II var en prediktorstudie med 245 deltakere som hadde mottatt enten veiledet selvhjelp via Internett (n = 149) eller ikke-veiledet selvhjelp (n = 96) for sosial angst. Prediktorer for etterlevelse, diagnose-fri status, og pålitelig endring (reliable change) ble undersøkt. Artikkel III var en spørreundersøkelse som undersøkte kunnskap og bruk av selvhjelp blant psykologer som arbeidet i psykisk helsevern i Norge.

Resultater: I Artikkel I fant vi at veiledet selvhjelp via Internett for panikklidelse var en effektiv behandling etter å ha blitt transportert fra de som utviklet programmet til et miljø som var ukjente med selvhjelpsbehandling via Internett. Imidlertid var det en trend at effekten var mindre og frafallet høyere i det nye miljøet sammenlignet resultater fra utviklernes klinikk. Pasienter med høyere alder hadde mer bedring, mens de som hadde hatt panikklidelse lenger hadde mindre bedring av symptomer på panikklidelse.

I Artikkel II fant vi at et høyt nivå av sosial angst før selvhjelpsbehandling for sosial angst var forbundet med mindre effekt, mens komorbide symptomer ikke hadde sammenheng med effekt. Videre viste resultatene at pasienter som anså ikke-veiledet selvhjelp for sosial angst som en troverdig behandling hadde effekt på linje med de som hadde mottatt veiledet selvhjelp via Internett for sosial angst.

I Artikkel III fant vi at flertallet av psykologene som arbeidet i psykisk helsevern hadde anbefalt selvhjelp til sine pasienter. Imidlertid var selvhjelp primært brukt som et supplement, og ikke som et alternativ, til ansikt-til-ansikt kontakt.

Konklusjon: Tatt de metodiske begrensingene i betraktning, gir denne avhandlingen ytterligere støtte til at selvhjelp for sosial angst og panikklidelse er en effektiv behandling. Resultatene tyder på at selvhjelp for sosial angst og panikklidelse er effektiv på tvers av kliniske miljøer og pasientgrupper. For at selvhjelp skal kunne øke tilgangen på psykologiske intervensjoner, må fremtidig disseminering og forskning inkludere faktorer som er forbundet med effekt og bruk av selvhjelp.

Abbreviations

ACQ	Agoraphobic Cognitions Questionnaire
BAI	Beck Anxiety Inventory
BDI	Beck Depression Inventory
BIS	Bergen Insomnia Scale
BSQ	Body Sensations Questionnaire
CBT	Cognitive behavioral therapy
CCBT	Computer-aided cognitive behavioral therapy
DSM-IV	Diagnostic and Statistical Manual of Mental Disorders (4^{th} ed.)
ES	Effect size
GAD	General anxiety disorder
N	Number
PD	Panic disorder
RC	Reliable change
RCT	Randomized controlled trial
RGS	Residual gain score
SAD	Social anxiety disorder
SIAS	Social Interaction Anxiety Scale
SPS	Social Phobia Scale

SPSS	Statistical Package for the Social Sciences
SPSQ	Social Phobia Symptom Questionnaire
SSRI	Selective serotonin reuptake inhibitor

1. Introduction

The aim of the present thesis is to study factors associated with the treatment effect and use of self-help interventions. On one hand, self-help interventions for anxiety and depression have been documented to be effective through a number of studies, many published in the last decade (Cuijpers, Donker, van Straten, Li, & Andersson, 2010; Kiluk et al., 2011; Spek et al., 2007). Moreover, self-help interventions have been suggested as a promising strategy to increase access to psychological interventions for those with anxiety and depression by "giving psychology away" (Miller, 1969, p. 1074). Self-help interventions have also been proposed as a "revolution" in terms of improving access to mental health services (Gartner & Riessman, 1984; Kiluk et al., 2011; Norcross, 2000), and are more specifically suggested to compensate for limited access to psychological therapies (Barlow, Ellard, Hainswoth, Jones, & Fisher, 2005; Shafran et al., 2009), to reduce the stigma associated with seeking help from a therapist (van't Hof, Cuijpers, & Stein, 2009), and to meet the need for mental health services in rural areas (Griffiths & Christensen, 2007; Titov, 2007; van't Hof et al., 2009). It is important to note that self-help is not suggested to replace face-to-face psychological therapies, but rather as an alternative for those who consider this form of treatment. Taken together, self-help shows promise as a method that has the potential to increase the access to effective psychological interventions (Bennett & Glasgow, 2009; Griffiths, Farrer, & Christensen, 2007; Kiluk et al., 2011; Marks & Cavanagh, 2009; Newman, Szkodny, Llera, & Przeworski, 2011).

On the other hand, the reported effects of self-help interventions are heterogeneous (Carroll & Rounsaville, 2010; Kiluk et al., 2011), and one of the main questions in the self-help literature concerns "under what conditions and to which populations" are self-help interventions effective (Kiluk et al., 2011, p. 1)? Several factors are suggested to be associated with the treatment effect and use of self-help interventions (Marks & Cavanagh, 2009). First, how are outcomes influenced by the translation of a self-help intervention when disseminated from the developers to a new setting (Chorpita & Nakamura, 2004; Schoenwald, 2008)? Second, how do pre-treatment patient characteristics influence the treatment effect of self-help (Andersson,

Carlbring, & Grimund, 2008a; Carlbring, Westling, Ljungstrand, Ekselius, & Andersson, 2001a)? Finally, how is the knowledge and use of self-help interventions among professionals in the mental health services (Keeley, Williams, & Shapiro, 2002)? These are all factors that are suggested to have relevance to the treatment effect and use of self-help, but have not been adequately addressed in the research literature, as only a few studies have empirically examined factors associated with the effect and use of self-help interventions. Thus, present thesis addresses some aspects of this gap in the research literature with a special emphasis on guided self-help via the Internet for adults with social anxiety disorder (SAD) and panic disorder (PD).

Before reviewing the literature on factors associated with the treatment effect and use of self-help in more detail, an introduction to self-help interventions and the diagnoses in question will be provided.

1. 1 Defining Self-help Interventions

Self-help materials are sought and used by individuals who experience a wide range of mental health problems, life events, and behavioral changes (Norcross, 2000; Swindle, Heller, Pescosolido, & Kikuzawa, 2000). There is so far no consensus about the definition of self-help (Andersson, 2009; Barak, 1999; Gellatly et al., 2007), however, in this thesis self-help is defined as "a psychological treatment in which the patient takes home a standardized psychological treatment protocol and works through it more or less independently" (Cuijpers & Schuurmans, 2007, p. 284). Accordingly, self-help interventions have a strong educational component as they provide information, explanations, and exercises relevant for the actual problem, with the aim of managing the symptoms and consequences of these symptoms (Barlow et al., 2005; Munoz, 2010). Accordingly, self-help materials are presented in a manner that may be used with no or minimal professional guidance (Gartner & Riessman, 1977; McKendree-Smith, Floyd, & Scogin, 2003; van't Hof et al., 2009). Also, this definition excludes materials, such as movies or novels, that do not involve a standardized therapeutic treatment, but may be valuable in terms of providing information and improving understanding of a mental health problem.

Self-help interventions for mental health problems stem from two different paths (Richards, 2004). The first is derived from the Do It Yourself (DIY) movement in which mutual support is provided by people with mental health problems or their families (Brown, Shepherd, Wituk, & Meissen, 2008). This approach mainly evolved from the users' movement whose aim is to share experiences and common complaints, to facilitate a good quality of life in the presence of a disorder, and not primarily to seek a cure for that disorder (Barlow et al., 2005). The second path is derived from professionally developed standardized materials with the potential to provide treatment for mental health problems with little or no professional support (Pratt, Halliday, & Maxwell, 2009). This approach builds upon professionally developed therapeutic models and techniques in which the aim is to reduce symptoms and recover from the disorder in question. The latter strategy is the focus of the present thesis.

Self-help is a low-intensity intervention as it demands less input of the therapist's time, and thereby has the potential to increase access to psychological therapies. However, the concept of low-intensity interventions is a broader one as it also refers to group therapy, peer support groups, and other forms of therapies with reduced therapist input per patient. In addition to the present definition of self-help, the aspect of low-intensity is only true for the therapist not for the patient as the patient is expected to invest as much, if not more, time and effort when using self-help interventions compared to face-to-face therapy (Richards, 2004).

The role of therapist guidance in relation to the effect of self-help interventions is debated in the self-help literature (Newman et al., 2011). Guidance can be categorized into four common forms; unguided self-help, guided self-help, self-help as integrated into face-to-face therapy, and finally self-help as a supplement to face-to-face therapy (Cuijpers & Schuurmans, 2007; van't Hof et al., 2009). The first two categories are the main focus in this thesis.

Self-help may be available through books (Cuijpers, 1997), audiotapes (Raylu, Oei, & Loo, 2008), computers (Marks et al., 2003), and the Internet (Carlbring, Bohman, et al., 2006; Ritterband, Thorndike, Gonder-Frederick, et al., 2009). The Internet has for

the last decade increasingly been used to provide self-help. Some Internet interventions are fully automated with computerized feedback systems and computer generated individualized decisions (Marks et al., 2003; Ritterband, Thorndike, Gonder-Frederick, et al., 2009), whereas others are text-based with tailoring are directed through "live" therapist guidance (Carlbring et al., 2007).

The present thesis uses the terms "self-help" and "self-help intervention", terms that are partially overlapping with other terms used in the literature such as "minimal-contact therapies" (Newman et al., 2011), "computer-aided psychological treatments" (Marks & Cavanagh, 2009), "bibliotherapy" (Cuijpers, 1997), "guided self-help via Internet" (Andersson, Bergstrom, et al., 2008), and "Internet Intervention" (Ritterband & Tate, 2009), all of which refer to self-help interventions that differ from one another regarding therapist guidance, program interactivity, and modes of delivery.

1. 2 Efficacy of Self-help Interventions

A recent review of meta-analyses on self-help interventions for anxiety and depressive disorders concluded that self-help interventions yielded moderate to large between-group effect sizes when compared to control conditions, usually waiting list controls (van't Hof et al., 2009). When compared to face-to-face cognitive behavioral therapy (CBT), equal treatment effects between guided self-help and face-to-face CBT have been reported (Cuijpers, Donker, et al., 2010; Hirai & Clum, 2006). However, self-help has also been found to be inferior to face-to-face therapy (Spek et al., 2007), mainly when unguided self-help and face-to-face therapy were compared (Hirai & Clum, 2006). It has also been reported that the effect sizes for Internet-based self-help are higher for anxiety disorders than depressive disorders (Spek et al., 2007), which is hypothesized to be caused by more therapist guidance in the anxiety self-help studies than in the depression self-help studies (Spek et al., 2007). Taken together, the present data base indicates that self-help interventions for anxiety and depressive disorders are more effective than no treatment, and that guided self-help interventions for anxiety and depression may be as effective as face-to-face treatment (van't Hof et al., 2009).

Based on the existing research evidence, national health authorities in some countries have recommended self-help interventions for the treatment of mild to moderate anxiety and depression. For example, in the United Kingdom, computer-aided cognitive behavioral therapy (CCBT) has since 2006 been recommended for anxiety and depressive disorders (NICE, 2006). Also, the recommendation is being implemented through Improving Access to Psychological Therapies (Clark, Layard, Smithies, Richards, & Suckling, 2009). In Sweden, guided self-help is a recommended treatment for anxiety and depression, and it is now being implemented in the mental health services (Andersson, 2009; Bergström et al., 2009). In Norway, new clinical guidelines for the treatment of mild to moderate depression were published in 2009, which included a specific recommendation of an Internet-based self-help intervention for depression (MoodGym) (Helsedirektoratet, 2009).

However, as concluded in the meta-analyses (i.e. Cuijpers, van Straten, & Andersson, 2008) and the overviews (i.e. Cuijpers & Schuurmans, 2007; Marks & Cavanagh, 2009) reported treatment effects of self-help interventions are heterogeneous, and there is a lack of knowledge about factors that are associated with the effect and the use of self-help interventions.

1. 3 Social Anxiety Disorder and Panic Disorder

A number of self-help interventions have been developed for social anxiety disorder (SAD) and panic disorder (PD) from the rationale and therapeutic models described in CBT. A considerable amount of the published Internet-based self-help studies for mental health problems were conducted for these two diagnoses (Andersson, Holmstrom, Sparthan, Furmark, & Carlbring, 2004; Carlbring, Bohman, et al., 2006; Riper et al., 2010; Spek et al., 2007; Titov, Andrews, Johnston, Schwencke, & Choi, 2009).

1. 3. 1 Diagnoses and prevalence.

According to Diagnostic and Statistical Manual of Mental Disorders 4th ed (DSM-IV; APA, 1994), SAD involves the fear of being humiliated or scrutinized in front of

others in social performance or social interaction situations (Stein & Stein, 2008). SAD is the most prevalent anxiety disorder besides simple phobia, with lifetime prevalence of 7-12 %, and 12-month prevalence of 7% (Furmark et al., 1999; Kringlen, Torgersen, & Cramer, 2006; Ruscio et al., 2008). In primary care 14.4% of patients have SAD as a primary or comorbid disorder (Weiller, Bisserbe, Boyer, Lepine, & Lecrubier, 1996). Two different types of SAD are referred to in the literature; the generalised subtype is characterized by a fear of being humiliated in a number of social performance and interaction situations, whereas the non-generalized subtype is characterised by a fear of being humiliated or embarrassed in a limited number of situations, most commonly when giving a public speech (Chambless, Tran, & Glass, 1997; Furmark, Tillfors, Stattin, Ekselius, & Fredrikson, 2000). The former is described as a more disabling disorder than the latter, and is associated with poorer treatment outcome (Brown & Barlow, 1992; Otto, Pollack, & Maki, 2000).

Panic disorder (PD) is described as the "fear of fear", as there is an anxiety of the anxiety reaction itself. The most common fears are the fear of dying, becoming mad, or to losing control (DSM-IV, 1994). PD is found to have lifetime prevalence close to 5%, and a 12-month prevalence of around 2% in community samples (Kessler et al., 2006; Kringlen et al., 2006). In primary care, 8% of patients have PD as their primary or comorbid disorder (Roy-Byrne, Craske, & Stein, 2006).

PD with agoraphobia is found in 1.1% of the population (Kessler et al., 2006). Agoraphobia involves the avoidance of places where it is difficult to escape if one feels that a panic attack is emerging; such as shopping malls, busses, cinemas, or being away from home without a companion.

1. 3. 2 Onset and course.

SAD typically starts in childhood or early teens (Kessler, 2003; Ruscio et al., 2008), and onset after 25 years old is less common (Wittchen & Fehm, 2003). Severe impairment, predominantly in social life and close relationships, are associated with SAD (Ruscio et al., 2008). SAD is also associated with increased risk for comorbid conditions, as one study reported that two-thirds of patients had a comorbid disorder

(Ruscio et al., 2008). The most common comorbid conditions are depression, substance abuse, PD, general anxiety disorder, and avoidant personality disorder (Ledley et al., 2005; Stein, 2008). High levels of severity and the presence of comorbidity are suggested to negatively affect the treatment outcome for those with SAD (Eskildsen, Hougaard, & Rosenberg, 2010). Generally, patients with SAD have an unremitting course if left untreated (Bruce et al., 2005).

The onset of PD is typically in adulthood, often in association with a stressful life-situation (Klauke, Deckert, Reif, Pauli, & Domschke, 2010). The majority of patients with PD seek medical care, often in emergency rooms, for their first panic attack (Foldes-Busque et al., 2011). Lack of a confirmed medical diagnose often leads the patient to further medical examinations, often within cardiac departments (Dammen, Arnesen, Ekeberg, & Friis, 2004). For this reason, PD is described as the most costly mental health disorder within somatic health services (Deacon, Lickel, & Abramowitz, 2008). In a study of help-seeking individuals with PD, it has been found that 25% had comorbid depression, 49% had personality disorders, and 10% reported substance abuse (Albert, Maina, Bergesio, & Bogetto, 2006). Moreover, reduced interpersonal functioning has been reported in patients with PD (Markowitz, Weissman, Ouellette, Lish, & Klerman, 1989). Symptom severity and comorbidities are suggested to negatively affect the treatment outcome of PD (Dow et al., 2007a; Kampman, Keijsers, Hoogduin, & Hendriks, 2008).

1. 3. 3 Effective treatments for SAD and PD.

The treatments for SAD and PD with the best documented evidence-base are selective serotonin reuptake inhibitors (SSRIs) and CBT (Heimberg, 2002; Hofmann & Smits, 2008; Ponniah & Hollon, 2009; Rachman & De Silva, 2004; Stein & Stein, 2008; Westen & Morrison, 2001). When comparing SSRIs and CBT for SAD and PD treatment, the evidence shows that CBT and SSRIs have comparable short-term effect, but that CBT have better long-term effects and is better tolerated (Barlow, Gorman, Shear, & Woods, 2000; Gould, Otto, & Pollack, 1995). Based on the existing evidence and the fact that the majority of patients prefer psychological interventions (Jorm et

al., 2000; Shafran et al., 2009), access to CBT has the potential to reduce the burden caused by SAD and PD (Mennin, Heimberg, & Jack, 2000). However, the access to CBT for SAD and PD is very limited (Shafran et al., 2009), which can be partly explained by the lack of trained personnel, the lack of mental health services in rural areas (Griffiths & Christensen, 2007), and a perceived irrelevance of treatment research to those who work in clinical practice (Shafran et al., 2009).

CBT-based interventions with minimal or no therapist guidance have been proposed as one strategy to meet the need for treatment for those with SAD and PD (Andersson, Bergstrom, et al., 2008; Carlbring et al., 2007; Titov, Andrews, Choi, Schwencke, & Johnston, 2009). Printed CBT-based self-help materials for anxiety disorders have been available for decades. Some of these materials were documented as effective (Glasgow & Rosen, 1978), however, the majority of self-help books and pamphlets have not been evaluated (Rosen, 1987).

More recently, CBT-based self-help interventions via Internet for SAD and PD have been assessed in numerous clinical trials. The majority of the interventions in these trials involve some form of therapist guidance, including pre-treatment screening of suitability for the intervention (Marks, Cavanagh, & Gega, 2007). Guidance may be provided through live contact with the therapist, i.e. via telephone or email throughout the treatment period. Furthermore, the intervention is presented in modules or steps that may take from six to ten weeks/sessions to complete (Andersson, Bergström, et al., 2008; Andrews & Titov, 2009; Schneider, Mataix-Cols, Marks, & Bachofen, 2005). Based on CBT principles, patients initially receive education about the diagnosis and CBT model in question, and set goals for the intervention. Step-by-step guidance on how to carry out graded exposure exercisers, problem solving, or otherwise manage symptoms, are provided. Finally, relapse prevention strategies are outlined (Andrews & Titov, 2009). Most programs also include rating of progress and treatment gains throughout the intervention period (Marks et al., 2007).

For SAD, at least five independent research groups have developed self-help interventions and tested the effects of these in randomized controlled trials (RCT's)

(Abramowitz, Moore, Braddock, & Harrington, 2009; Andersson et al., 2004; Berger, Hohl, & Caspar, 2009; Rapee, Abbott, Baillie, & Gaston, 2007; Titov, Andrews, Choi, Schwencke, & Mahoney, 2008). In these studies, self-help interventions for SAD have been documented as effective, with large between group effect sizes (ES) when compared to the waiting list controls. When guided self-help was compared to face-to-face CBT, which is considered as the treatment of choice for SAD (Heimberg, 2002), the two treatment-formats yielded comparable results (Cuijpers, Donker, et al., 2010). When effects from guided self-help programs have been presented at an individual rather than a group level, the findings suggest that 43% -60% of the patients have clinical significant change after guided self-help for SAD (Andersson et al., 2006; Berger et al., 2009).

Some studies reported that unguided self-help for SAD has a lesser effect than does guided self-help (Rapee et al., 2007; Titov, Andrews, Choi, et al., 2009). Furthermore, unguided self-help has been associated with higher drop-out than guided self-help (Christensen, Griffiths, & Farrer, 2009). Other studies have reported that a subgroup of patients who received unguided self-help for SAD experienced comparable results as those who had received guided self-help (Berger et al., 2011; Furmark et al., 2009). Taken together, this indicates that self-help interventions for SAD are effective for the majority of the treated patients, and unguided self-help is as effective for a subgroup of patients.

Self-help interventions for PD have been shown to be effective in a number of trials (Barlow et al., 2005; Hecker, Losee, Roberson-Nay, & Maki, 2004; Kenwright & Marks, 2004). When comparing guided self-help and face-to-face CBT, the latter described as the treatment of choice for PD (Butler, Chapman, Forman, & Beck, 2006), no significant differences were reported (Kiropoulos et al., 2008). When outcomes were defined on an individual rather than a group level, findings suggested that 48% to 68% of the patients had a clinical change after receiving guided self-help for PD (Carlbring et al., 2005).

The above findings suggest that self-help interventions for SAD and PD are effective for the majority of patients, but that there is a substantial group of patients does not benefit from self-help for SAD and PD. More knowledge is therefore needed about the factors associated with treatment outcome as a result of self-help for SAD and PD.

1. 4 Factors Associated with Effect and Use of Self-help

Based on the documented treatment effect of self-help interventions it has been concluded that "it is time to start thinking about implementation [of self-help] in routine care" (Cuijpers, Donker, et al., 2010, p. 1943). However, due to heterogeneous findings regarding the reported effects, there is a need for more knowledge about factors associated with effect and use of self-help interventions. This should be attended to before self-help is "launched on a large scale" (Kiluk et al., 2011; van't Hof et al., 2009, p. 38).

In line with the need to study factors associated with the effect and use of self-help, the Stage Model of Behavioral Therapies Research emphasizes that effect studies are not the endpoint of the research process (Rounsaville, Carroll, & Onken, 2001). This model proposes that after the development of a new treatment (stage one), and after evaluating the effect of that intervention (stage two), the third stage is to study factors associated to the effect of and access to the treatment (stage three). Kazdin (2001) underlines the importance of stage three as it provides vital knowledge needed when "bringing the treatment to the market" (Kazdin, 2001, p. 143). This knowledge includes understanding the conditions under which the treatment is effective and for whom the treatment may be effective. Without this knowledge, the implementation of the treatment in the clinical settings is likely to "clog up" (Kazdin, 2001).

The present thesis examines the following three factors, all of which are suggested to be associated with the treatment effect and use of self-help interventions. First, there is a concern about the transportability of self-help interventions to new settings (Kaltenthaler, Parry, & Beverley, 2004). This knowledge will determine to what degree self-help interventions successfully can be transported from the developers to a new setting and subsequently increase the access to psychological interventions.

Second, there is a need for knowledge about patient pre-treatment characteristics that influence treatment effects (Andersson, Carlbring, et al., 2008a; Cuijpers, Donker, et al., 2010). This knowledge is importance because it provides information about which patients may benefit from self-help interventions, which groups require modified interventions, and on what scale self-help should be made accessible. Finally, data about professionals' knowledge and use of self-help in the mental health services are needed as it may indicate the access to self-help in mental health services and the need for training in future dissemination efforts (Andersson, 2010).

Taken together, this thesis will examine factors that are suggested to be associated with the treatment effect and use of self-help interventions with a special emphasis on self-help via the Internet for SAD and PD.

1. 4. 1 Transportability of self-help.

Concerns have been voiced about how the transportation of psychological interventions from the developers to a new setting may negatively affect treatment outcomes (Schoenwald, 2008). These concerns include the worrys that differences between the developers setting and the new setting in terms of the cultural context, patient population, therapist experience, and local regulations may moderate treatment effect (Schoenwald, 2008). Also, the transportability of an intervention from the developers' clinic to a new setting, addresses the concern about researcher allegiance (Fixsen, Naoom, Blase, Friedman, & Wallace, 2005; Kaltenthaler et al., 2004; Luborsky et al., 1999; Marks et al., 2007), or that the effect of the intervention is site-dependent. In line with the above, one of the main criteria in order to establish a treatment as empirically validated is to establish effect by at least two independent research-groups (Chambless & Hollon, 1998). A benchmarking strategy will be applied in order to evaluate transportability and it will indicate to what degree the intervention remained its treatment effects after transportation to a new setting.

1. 4. 2 Pre-treatment characteristics as outcome predictors.

The existing research evidence for CBT-based self-help for SAD and PD indicate that this is an effective treatment format, but also that the outcome is heterogeneous because a considerable proportion of patients do not gain treatment effect. However, at the present, there is limited knowledge on how the pre-treatment characteristics predict outcome in self-help for SAD and PD (i.e. Andersson, Carlbring, et al., 2008a). Furthermore, it has been suggested that self-help formats may have other predictors than therapist-led therapy (Andersson, Carlbring, et al., 2008a), and predictors of outcome should therefore be examined within this specific treatment modality. Finally, knowledge about predictors of outcome from self-help interventions can strengthen the premises for identify patients' pre-treatment characteristics that are associated with outcome, and thus delineate the role and status that self-help interventions may have within public mental health services (Bennett & Glasgow, 2009).

The predictors selected in the present thesis are mainly based on previous research on predictors of outcome for face-to-face CBT for the treatment of SAD and PD (Dow et al., 2007a; Eskildsen et al., 2010; Kampman et al., 2008). Due to differences in research design across the studies presented in the thesis, some predictors are unique for the SAD and PD studies respectively. The following categories of predictors will be examined:

Sociodemographic characteristics.

Sociodemographic characteristics, including age and education level, will be examined as predictors of outcome for guided self-help for PD. From studies of face-to-face CBT for PD, no consistent relationships between sociodemographic factors and outcome have been reported (Dow et al., 2007b). However, it has been argued that self-help, and especially text-based self-help via Internet, is most suitable for younger and more educated patients (Gould et al., 1995; Hecker, Losee, Fritzler, & Fink, 1996; Marks et al., 2007). These factors are therefore of special interest as predictors of outcome for Internet-based interventions.

Primary symptom severity.

Self-help interventions have been suggested as less suitable for patients with more severe pre-treatment symptoms (Barlow et al., 2005). Also, the severity of symptoms have been of concern to professionals in the use of self-help as there is a limited possibility to detect deterioration in patients using this mode of treatment (Mora, Nevid, & Chaplin, 2008).

High levels of pre-treatment symptom severity in face-to-face CBT have been associated with high post-treatment symptom severity (Dow et al., 2007b; Eskildsen et al., 2010; Kampman et al., 2008). Furthermore, the generalized subtype of SAD, which is defined by anxiety in multiple social interaction or performance situations, has been associated with poorer treatment outcomes compared with the non-generalized SAD subtype (Brown, Heimberg, & Juster, 1995). Likewise has severity of PD, defined as duration of symptoms, predicted poorer outcomes from CBT for PD (Sharp & Power, 1999). As there is a lack of knowledge about how symptom severity relates to outcome for self-help interventions for SAD and PD, these will be included in these predictor-analyses.

Comorbid disorders and symptoms.

Comorbid disorders and symptoms are common in patients with anxiety disorders (Brown & Barlow, 1992; Olatunji, Cisler, & Tolin, 2010), and have been associated with poorer treatment outcome in some studies, whereas other studies could not identify such an association (Dow et al., 2007b; Eskildsen et al., 2010). It has also been suggested that comorbidity affects outcome in PD, but not in SAD (Olatunji et al., 2010). Reviews of predictors of outcome for face-to-face CBT for SAD and PD indicate that comorbid disorders and symptoms has mainly been related to poorer end-state functioning, and not to the degree of improvement (Eskildsen et al., 2010; Mennin et al., 2000).

From the self-help literature, the association between pre-treatment self-reported depression and generalized anxiety disorder (GAD) symptoms and outcome in self-

help for SAD were examined, but no association were identified (Titov et al., 2009). Another study of self-help intervention for SAD found that neither Axis I nor Axis II comorbidity predicted degree of improvement (Berger & Andersson, 2009). However, indicators of Cluster C personality disorder predicted less positive outcome for PD (Andersson, Carlbring, & Grimund, 2008b; Hecker et al., 2004).

As the above indicate, there is a need for knowledge about the association between comorbid and secondary symptoms and treatment outcome from self-help interventions (Andersson, Carlbring, et al., 2008a). In particular, there is a need for studies with large sample sizes in which small and moderate associations between outcome and comorbid symptoms may be detected (Dow et al., 2007b; Kampman et al., 2008).

Credibility and adherence.

Credibility, defined as the perceived accountability of the treatment and the expectancy for improvement from the treatment (Borkovec & Nau, 1972), has been associated with outcome for face-to-face CBT (Dow et al., 2007b). Credibility is suggested to be of special relevance to self-help as there is a concern that self-help treatment is perceived as a "less credible" treatment among patients (Waller & Gilbody, 2009). Patients who expect face-to-face therapy may perceive self-help as inferior and less credible for different reasons, i.e. inexperience with computers and Internet, self-help as too demanding and complex, or the lack of flexibility in self-help programs (Marks et al., 2007). To summarize, there are inconclusive findings regarding the association between credibility and outcome (Carlbring, Westling, Ljungstrand, Ekselius, & Andersson, 2001b; Cuijpers & Schuurmans, 2007), and more research on the role of credibility in both guided and unguided self-help interventions is needed (Ritterband, Thorndike, Cox, Kovatchev, & Gonder-Frederick, 2009).

Adherence has been of major concern in the self-help literature, especially in regard to unguided self-help interventions (Christensen et al., 2009; Eysenbach, 2005). Adherence is commonly defined as modules completed of the self-help intervention (Christensen et al., 2009; Rapee et al., 2007). Two somewhat different questions have

been examined in regard to adherence; what factors are related to adherence, and does adherence influence treatment outcome?

Predictors of adherence in self-help were reviewed by Christensen 2009, and it was reported that better adherence was associated with younger age and lower baseline rates of depressive symptoms. However, it was noted in the review that too few studies have been conducted in order to conclude regarding predictors of adherence in self-help for PD, and that there is lack of studies reporting predictors of adherence on self-help for SAD (Christensen, et al., 2009).

From self-help for SAD, one study has reported that increased adherence, defined as modules completed, was positively associated with outcome from self-help for SAD (Rapee et al., 2007).

Taken together, pre-treatment patient characteristics including sociodemographic characteristics, symptom severity, comorbid and secondary symptoms, credibility, and adherence are potential predictors of outcome from self-help interventions for SAD and PD (Andersson, Carlbring, et al., 2008b; Andrews, Cuijpers, Craske, McEvoy, & Titov, 2010; Ritterband, Thorndike, Cox, et al., 2009).

1. 4. 3 Knowledge and use of self-help among professionals in mental health services.

Research from the Western world, mainly from USA and UK, indicate that the use of self-help interventions by professionals in mental health services are limited (Keeley et al., 2002; Norcross, 2006; Pratt et al., 2009). Furthermore, professionals' acceptance of self-help interventions is suggested to be less positive than patients' (Pratt et al., 2009; Waller & Gilbody, 2009).

Professionals acceptance and use of self-help have been associated with theoretical orientation (Campbell & Smith, 2003; Mora et al., 2008), and CBT therapists have reported to be more positive towards self-help compared to psychoanalytically oriented therapists (Campbell & Smith, 2003; Mora et al., 2008). However, professionals are generally reticent toward self-help materials regardless of theoretical

orientation (Keeley et al., 2002; Pratt et al., 2009). Knowledge acquired through training in the use of self-help materials is also associated with positive ratings and increased use of self-help (Keeley et al., 2002; MacLeod, Martinez, & Williams, 2009a). Knowledge about predictors of outcome for self-help interventions has also been suggested to have an impact on professionals' use of self-help (Andersson, Carlbring, & Grimund, 2008; Campbell & Smith, 2003).

The existing findings regarding the knowledge and use of self-help among professionals are mainly from studies conducted among CBT therapists (Keeley et al., 2002; MacLeod, Martinez, & Williams, 2009b; Whitfield & Williams, 2004) or studies with small samples (Adams & Pitre, 2000; Mora et al., 2008; Pratt et al., 2009). There is a need to learn more about the knowledge and use of self-help materials among professional within the ordinary mental health services, as this has relevance to future dissemination efforts of self-help interventions to this setting.

1. 5 Research Aims

Based on the existing research on the treatment effect of self-help interventions, the present thesis examines factors related to the treatment effect and use of self-help interventions with a special emphasis on Internet-based self-help for SAD and PD. Three research aims are addressed in the three papers in the present thesis: 1) How is the transportability of guided self-help via Internet for PD when disseminated to a new setting with therapists inexperienced with self-help (Paper I)? 2) How are pre-treatment characteristics associated with the outcome of self-help interventions for SAD and PD (Paper I and II)? 3) How is the knowledge and use of self-help among professionals in mental health services (Paper III)?

2. Methods and Results

Because the three papers have different procedures, samples, and measures, the Method and Result section for each paper will be presented sequentially before an overall discussion of the research findings.

2. 1 Paper I: "Guided Self-help via Internet for Panic Disorder: Dissemination Across Countries"

2. 1. 1 Research aims of Paper I.

The primary aim of Paper I was to examine effects of a guided self-help intervention via Internet for PD after being transported to a new setting and implemented by therapists inexperienced with self-help interventions. The second aim was to examine effects on symptoms and problems other than the targeted PD-symptoms. The third aim was to examine predictors of outcome for Internet-based guided self-help for PD.

2. 1. 2 Procedures, assessment, and treatment.

Participants were recruited through an ad in the local newspaper and 87 persons responded. Initially, telephone screening was used to include persons for the face-to-face inclusion interview. A total of 38 persons (13 men) fulfilled the screening criteria and 36 attended the face-to-face inclusion interview.

To be included in the study participants needed to have PD as their primary diagnosis according to the Diagnostic and Statistical Manual of Mental Disorders IV (DSM-IV) using the Structured Clinical Interview for DSM-IV Axis I disorders (SCID I; First, Spitzer, Gibbon, & Williams, 1995), assessed by the three clinical psychologists involved in the trial. Participants attended face-to-face assessment interviews at T1: pre-treatment, T2: post-treatment, T3: at 6-month follow-up. See Paper I for more details.

Guided self-help via the Internet for the treatment of PD.

The program was comprised of ten modules with an average of 13.4 pages (range 5-25) of text and pictures. The program was comprised of the following topics: psychoeducation, exercises for breathing and hyperventilation, cognitive restructuring, interceptive exposure, in vivo exposure, and relapse prevention. Participants automatically accessed a new module once a week.

The program was based on Clark's (1986) and Barlow's (2000) cognitive models for PD. The program was introduced to the participants by one of the three clinical psychologists, the same who did the pre-scheduled weekly 10 minutes telephone contact. The aim of the contact was to answer questions regarding the modules, to give feedback, and for participants to bring up additional problems.

Due to restriction given by Norwegian regulations, the present study did not involve email contact with the therapist, prompts, or online discussion group for the participants during treatment, as used in the Swedish studies (Carlbring, Bohman, et al., 2006; Carlbring, Ekselius, & Andersson, 2003; Carlbring et al., 2005; Carlbring et al., 2001a).

Prior to the beginning of the treatment period, the clinical psychologists had attended a one-day work-shop on guided self-help via Internet by professor Per Carlbring, one of the developers of the Swedish program.

Outcome measures.

All measures were standard internationally used measures for PD research (Table 1). See Paper I for more details.

Table 1

Measures used in Paper I.

Measure	Reference	Cronbach's alpha T1
Primary outcome measures		
The Agoraphobic Cognitions Questionnaire, ACQ	Chambless, Caputo, Bright, & Gallagher, 1984	0.69

The Body Sensation Questionnaire, BSQ	Chambless et al., 1984	0.81
Mobility Inventory-Alone, MI-A	Chambless, Caputo, Jasin, Gracely, & Williams, 1985	0.87
Secondary outcomes		
Beck Depression Inventory, BDI	Beck, Erbaugh, Ward, Mock, & Mendelsohn, 1961	0.87
The Bergen Insomnia Scale, BIS	Pallesen, Bjorvatn, Nordhus, Siversten, & Hjørnevik, 2008	0.87
Inventory of Interpersonal Problems 64, IIP-64	Horowitz, Rosenberg, Baer, Ureño, & Villaseñor, 1988	0.95

Predictors of outcome.

Socio demographic factors: Age and level of education.

History of PD-symptoms: Duration of PD

Severity of PD-symptoms: Clinician Severity Rating (CSR; Di Nardo & Barlow, 1988).

Comorbid symptoms: Depressive symptoms (BDI), sleep problems (BIS), and interpersonal problems (IIP-64) (see Table 1).

Satisfaction with treatment.

Global evaluation and satisfaction (SLUTTP; Havik et al., 1995).

Statistical analyses.

Group differences at pre-treatment between treatment completers and drop-out were analysed with *t* test for independent groups.

Change in average pre-treatment, post-treatment and follow-up scores on outcome measures were tested with *t* test for dependent samples. An intention-to-treat analytic

strategy was applied in the present study, replacing missing values by carrying last observation forward.

The relationships between selected predictors and residual gain scores at post-treatment and 6 month follow-up were analysed in multiple regression analyses. Statistical analyses were performed using SPSS version 15.0.1 software.

2. 1. 3 Summary of results in Paper I

A total of 27 patients were included in the study, and seven (26%) dropped out during treatment. Medium to large effects on PD-symptoms were reported after treatment and at six month follow-up, with smaller effects on secondary outcome measures; depressive symptoms, interpersonal problems, and sleep problems. When effects and drop-out was compared between the developers' studies and present study there was a trend that effects were higher and drop-out was lower in the developers' setting.

Predictor analyses showed that participants with longer duration of PD-symptoms had less improvement, whereas higher age predicted more improvement.

All participants who attended the post-treatment assessment were satisfied with treatment, and perceived the treatment as suitable for their problems. The majority (74 %) were satisfied with the reduction in symptoms they had obtained during treatment, whereas 5 % reported a negative impact of their treatment.

2. 2 Paper II "Outcome Predictors in Guided and Unguided Self-Help for Social Anxiety Disorder"

2. 2. 1 Research aim of Paper II.

The primary aim of Paper II was to examine pre-treatment patient characteristics as predictors of outcome in guided and unguided self-help for SAD.

2. 2. 2 Procedures, assessment, and treatment.

The study sample was comprised of participants from three previously published trials on self-help interventions for the treatment of SAD (Carlbring, Furmark, Steczkó, Ekselius, & Andersson, 2006; Carlbring et al., 2007; Furmark et al., 2009).

Participants were recruited through media advertising and a treatment research participation website. To be included in the studies, participants were required to have SAD as their primary diagnosis according to the Diagnostic and Statistical Manual of Mental Disorders IV (DSM-IV) using the Structured Clinical Interview for DSM-IV Axis I disorders (SCID I; First et al., 1995).

Pre-treatment assessments were conducted via Internet and telephone interview. The primary diagnosis was assessed at pre-treatment with SCID I. In addition, indicators of avoidant personality disorder symptoms were assessed using the Social Phobia Screening Questionnaire (SPSQ; Furmark et al., 1999).

Post-treatment and follow-up assessment was conducted via the Internet, with follow-up conducted after 6 months in the Carlbring et al. (2006), and after 12 months in the Furmark et al. (2009) and Carlbring et al. (2007) studies. At post-treatment and follow-up, the primary diagnosis of SAD was assessed using the SPSQ. Study design, methods, and results of each study are described in more detail in the original papers.

Participants who had received active treatment in the effect studies were included in present study. Se Paper II for more details.

Treatment.

The same manual was used in all studies and was based on Furmark, Holmström, Sparthan, Carlbring, and Andersson's CBT self-help book (Furmark, Holmström, Sparthan, Carlbring, & Andersson, 2006). The manual was comprised of nine weekly modules. The first two modules introduce self-help treatment, the SAD diagnosis and describe the CBT model for SAD based on Clark and Wells model (1995). The third through the seventh module focused on the CBT model for "thinking errors" and cognitive distortions, and how to challenge these assumptions through reality testing and graded exposure. Self-focus and shift of focus through attention training were

emphasized throughout these modules. Module eight presents' social skills training and the ninth module emphasize relapse prevention. At the end of each module the participants are asked to describe the most important part of the module, and write down their experiences and results of the weekly homework assignments. The Internet version was comprised of a multiple-choice quiz at the end of each module.

Outcomes.

Three outcomes were examined in the predictor analyses in present study.

1) Treatment adherence defined as the completion of at least 75% of the 9 modules (Rizvi, Vogt, & Resick, 2009). A total of 206 patients (unguided self-help $n = 57$, guided self-help $n = 149$) were included in the analyses on adherence as information on adherence was not available from one of the original studies (Furmark et al. 2009).

2) Diagnosis-free status at follow-up.

3) Reliable change on the Social Phobia Scale (SPS; Mattick & Clarke, 1998) and the Social Interaction Anxiety Scale (SIAS; Mattick & Clarke, 1998) at post-treatment and follow-up.

Reliable change was defined according to Jacobson and Truax (1991) criteria.

Predictors.

Measures used in Paper II are listed in Table 2. See Paper II for more details.

Table 2

Pre-treatment measures used for predictor analyses in Paper II.

Measure	Reference	Cut-off
Pre-treatment characteristics		
Beck Anxiety Inventory, BAI	Beck, Brown, Epstein, & Steer, 1988	Moderate to severe ≥16 (Beck & Steer, 1993)
Montgomery Åsberg Depression Rating Scale - Self Report, MADRS-SR	Svanborg & Åsberg, 1994	Moderate to severe ≥ 20 (Svanborg & Ekselius, 2003)

Liebowitz Social Anxiety Scale Self report version, LSAS-SR	Fresco et al., 2001	Generalized social phobia > 60, specific social phobia 30-60 (Mennin et al., 2002).
Quality of Life Inventory, QoLI	Frisch, Cornell, Villanueva, & Retzlaff, 1992	High ≥ 1.00 (median from current sample)
Avoidant personality disorder (AVPD)	Furmark et al., 2000	Fulfils at least four APD criteria = yes
Program factors		
Treatment adherence.		Completed more than 75% = yes
Credibility-scale; C-scale	Borkovec & Nau, 1972	High ≥ 35 (median from current sample)

Statistical Analyses.

Baseline SPS and SIAS scores were included as covariates in the predictor analyses. Following the methods of de Graaf, Hollon, and Huibers (2010) continuous SPS and SIAS scores were transformed into standardized scores (ZSPS and ZSIAS).

Logistic regression analysis was used to estimate the unadjusted associations between individual pre-treatment characteristics and outcomes. In the fully adjusted model, a backward elimination procedure (Backward: LR) was used.

An intention-to-treat analytic strategy was applied in the present study as in the original studies, replacing missing values by carrying last observation forward.

Statistical analyses were performed using SPSS version 15.0.1 software.

2. 2. 3 Summary of results in Paper II.

No significant pre-treatment group differences were found between the guided and the unguided self-help group. Adherence rate in the total sample was 68.0%, in the guided self-help group 73.2% adhered to the intervention, and in the unguided self-help group

54.4% adhered to the intervention, a significant difference. Higher credibility was associated with better treatment adherence in the unguided group, no other predictors were related to adherence.

In the guided self-help group, lower baseline SPS scores and high adherence predicted a diagnosis-free status at follow-up. In the unguided self-help group, lower baseline SIAS scores and high credibility ratings predicted diagnosis-free status at follow-up.

In both the guided and unguided self-help groups, higher baseline SPS scores were associated with a reliable change on SPS at the end of treatment and at follow-up. Furthermore, in the unguided self-help group, treatment adherence was associated with a reliable change on SPS at the end of treatment.

In both the unguided and the guided self-help group, higher baseline levels of SIAS predicted a reliable change at the end of treatment and follow-up. Furthermore, in the unguided self-help group, high baseline scores on general anxiety symptoms and a high credibility rating were associated with a reliable change on the SIAS at the end of treatment.

2. 3 Paper III "Use of Self-Help Materials for Anxiety and Depression in Mental Health Services: A National Survey of Psychologists in Norway".

2. 3. 1 Research aim of Paper III.

The primary aim of Paper III was to examine the knowledge and use of self-help for anxiety and depression among psychologists working in ordinary mental health services in Norway.

2. 3. 2 Procedures and materials.

Members of the Norwegian Psychological Association (NPA) who at the time of the survey had a job involving clinical work in public or private mental health services and who had consented to be contacted about surveys through the NPA were eligible

for and invited to participate in the study. The invitation was signed by the president of the NPA and the authors, and distributed by the NPA in May 2009 to the members via e-mail with the questionnaire attached. Among the 2026 eligible NPA members, 141 could not be reached by e-mail and 22 did not have jobs involving clinical work. Thus, 1863 respondents were available, and 815 (43.7%) participated by completing the electronic questionnaire. Questions about self-help were restricted to those who had treated patients for anxiety and depression, yielding 781 respondents. The diagnoses of anxiety and depression were selected due to their prevalence and the availability of self-help materials for these disorders

Materials

The questionnaire was comprised of questions regarding the knowledge and use of self-help. The majority of the questions were translated and adapted from questionnaires developed by Williams and colleagues (2004), Stewart and Chambless (2007), with permission from the developers. Study variables included: 1) demographic factors, 2) knowledge and use of self-help, 3) evaluation of self-help materials in comparison to face-to-face interventions, 4) theoretical orientation, and 5) factors that need to change in order to use Internet/ computer based self-help.

2. 3. 3 Summary of results in Paper III.

Self-help materials were recommended by the majority of the responding psychologists. The majority of the study sample recommended self-help interventions primarily as a supplement to individual or group therapy, and less than 10% recommended self-help as an alternative to face-to-face therapist contact. An examination of the recommended self-help materials revealed that the primary aim of the materials recommended was to provide patients with general information about mental health disorders and how to cope with them. One-fifth of the participants were familiar with Internet/computer-based self-help programs, but only a few had used such programs. Those who were not familiar with or did not use Internet/computer-based self-help programs reported that they would need more information and training before beginning to use such programs.

Self-help materials were evaluated as being clearly inferior to therapist interventions, however, many participants replied “I don’t know” when asked to compare self-help and face-to-face interventions.

CBT was the theoretical orientation most strongly associated with recommendations of self-help, whereas psychodynamic and psychoanalytic orientations were associated with fewer recommendations of self-help. Self-help materials were recommended more often by those who had used self-help materials to increase their own therapy skills or had received training regarding self-help materials.

3. Discussion

The primary findings of this study will be presented and discussed in the following sections.

3. 1 Self-help Remained Effective After Transportation to a New Setting

The aim of Paper I was to examine the transportability of an Internet-based guided self-help intervention for PD. In the new setting, with therapists inexperienced with self-help, medium to large effect sizes on PD symptoms from pre- to post-treatment were found. Furthermore, improvements remained stable or showed further improvement at the six month follow-up. Effects were similar to those reported from the developers' context (i. e. Carlbring et al., 2003), and supports the transportability of the self-help intervention, and that treatment effects were related to the intervention itself and not to enthusiastic developers, experts in self-help, or to a specific setting (Glasgow, Lichtenstein, & Marcus, 2003). Furthermore, the study documented the effect of the intervention as implemented by a second independent research team and thereby giving further support to the evidence-base of this self-help intervention for PD (Chambless & Hollon, 1998). However, as these data were derived from an open pre-post design, results should be interpreted with caution, as will be discussed in more detail in the Methodological Considerations and Limitation section.

Even though the effects in the new setting were similar to those reported from the developers (Carlbring et al., 2003), there was a trend that effects in the present study were somewhat lower than those reported in the Swedish trials of the self-help intervention for PD (Carlbring, Bohman, et al., 2006; Carlbring et al., 2005). However, when difference between the Swedish trials and the Norwegian trial were examined in a benchmarking procedure, no significant differences were identified (Q (1) = 3.09, p = 0.08) (Table 3).

Table 3

Benchmarking data; within-group Effect sizes (Cohens *d*) across studies.

	Carlbring et al., 2001	Carlbring et al., 2003	Carlbring et al., 2005	Carlbring et al., 2006	Nordgreen et al., 2010
N*	20	11	24	30	27
ACQ+	1.48	0.83	1.22	1.70	0.80
BSQ+	1.81	0.79	1.45	1.95	0.61
MI-A+	0.85	0.62	0.64	1.00	0.55
BDI+	1.75	0.08	0.78	1.00	0.30
Drop-out	20%	27%	13%	7%	26%
§	$p = 0.74$	$p = 1.00$	$p = 0.49$	$p = 0.15$	
Type of guidance	a, b, c	a, c	a, e	a, c, d, e	d

Note. *Treatment group only, pre-post. + Cohen's *d* for within group effects. § Fishers exact test. Type of contact a) completed homework and quiz in order to proceed, b) prompts at the beginning and end of each module, c) email contact, d) weekly telephone contact, e) discussion group.

One possible explanation of lower treatment effect in our study compared to some of the studies from the Swedish setting may be differences in support and interaction during the trials. As shown in Table 3, the Swedish trials requested the completion of homework and quizzes in order for the participant to continue to the next module. In addition, email contact and prompts at the beginning of each module were provided to the participants. No such requirements or support were included in the Norwegian trial

due to Norwegian regulations at the time of the study regarding email contact and interaction through the Internet intervention. For the same reasons, no online discussion forum was provided to the participants, and taken together these differences may have left participants with less support.

Another reason for the somewhat lower effect sizes in our trial may have been lack of experience with self-help interventions in our setting.

The drop-out rate in our study was 26%. This is comparable to what have been reported in earlier Swedish trials from the same intervention (Carlbring et al., 2003; Carlbring et al., 2001a), in an Australian guided Internet-based self-help intervention for PD (Alvarenga, Richards, & Klein, 2004), in guided Internet-based self-help for depression (Andersson et al., 2005). These rates are similar to what was reported in a recent review of drop-out rates from minimal contact Internet-based interventions (Melville, Casey, & Kavanagh, 2010). However, the drop-out in our trial was somewhat higher than the two more recent Swedish trials (Carlbring, Bohman, et al., 2006; Carlbring et al., 2005), indicating that a higher drop-out rate, as discussed in regard to less treatment effect, may have been associated with limited access to support and requirements about completion of homework in the new setting, and the lack experience with self-help among the therapists.

However, the possibility that the inclusion criteria for the studies may have affected differences in treatment outcome cannot be ruled out. In our study, those who had received previous treatment, including CBT, were accepted. In contrast, the Swedish studies, and most clinical trials, did not include participants who have had previous CBT treatment. This is in order to avoid including participants in clinical studies that are perceived as “treatment-resistant“. This indicates that the effects found in the present study may be generalized to a wider population than in studies where previous CBT is an exclusion criterion.

Treatment effects on depressive symptoms are commonly reported in self-help studies targeting PD (Carlbring, Bohman, et al., 2006; Carlbring et al., 2003). However, sleep problems and interpersonal problems are less frequently studied, despites theirs

relevance to PD (Hoffart, Hackmann, & Sexton, 2006). Interestingly we found significant improvements in depressive symptoms, insomnia symptoms, and interpersonal problems during treatment. As concluded elsewhere, this finding indicates a spillover effect from symptom-specific treatment on secondary symptoms (Titov, Gibson, Andrews, & McEvoy, 2009). This indicates that symptom-specific and low-intensity interventions such as self-help via Internet have a beneficial effect on other symptoms and problems than the targeted disorder.

In line with other studies the participants reported very high satisfaction with the guided self-help via Internet suggesting that this treatment modality was accepted (Carlbring et al., 2001a; Titov, Andrews, Schwencke, Drobny, & Einstein, 2008). One should remember that the patients got the treatment that they wanted and had asked for. More specifically, patients found the most important components to be the written material, with explanations of anxiety symptoms and practical exercises. This is in line with Frank's (1989) model for common factors in psychotherapy that emphasise the treatment must have a rationale or conceptual scheme that provides a plausible explanation for the patient's symptoms and must prescribe a procedure for resolving them.

Overall, the results from this study support Munoz' notion that Internet interventions may be transported to another country as the intervention remained effective and was comparable to those found in the developers context (Munoz, 2010). The results also suggest that it is necessary to address the local regulations and therapists experience when providing skilled and sufficient support and feedback during self-help interventions.

3. 2 SAD Severity and Treatment Credibility Predict Outcome, but Comorbid Symptoms does Not

Pre-treatment patient characteristics were examined as predictors of outcome from self-help programs for SAD and PD in order to understand who may benefit from self-help interventions and who would likely not benefit (Marks & Cavanagh, 2009). Somewhat surprisingly, better outcomes from guided self-help via Internet for PD

were associated with higher age. This is contrary to the concern raised that only younger patients will benefit from self-help interventions, but in line with the finding that higher age was not negatively associated with treatment outcome from computer-aided CBT (Cavanagh et al., 2009). Moreover, a shorter duration of PD symptoms was associated with diagnosis-free status at post-treatment. This result is consistent with reported results for face-to-face therapy (Dow et al., 2007b), and underline the need for low-threshold services that provide early interventions to individuals before severity increases, and chronic and comorbid conditions develop.

This study of outcome predictors for guided and unguided self-help for SAD comprises the largest sample in any predictor study of self-help for SAD. Adherence was found to be significantly higher in the guided group than in the unguided group. This is in line with previous findings that indicate that more guidance and support in self-help provide higher adherence rates (Christensen et al., 2009).

We found that lower pre-treatment severity of SAD symptoms predicted a post-treatment diagnosis-free status. The association between lower pre-treatment symptoms and a post-treatment diagnosis-free status has also been found in studies of face-to-face CBT (Eskildsen et al., 2010; Kampman et al., 2008). Furthermore, higher pre-treatment severity of SAD symptoms was associated with a decrease (reliable change) of SAD symptoms at post-treatment. The association between higher pre-treatment severity and reliable change may be explained by a floor effect for patients with lower pre-treatment levels. Therefore, these apparently opposing findings may be explained by the fact that moving from having a SAD diagnosis at pre-treatment to a diagnosis-free status at post-treatment may represent a decrease in as little as one SAD symptom, whereas a reliable change represents a change in SAD symptoms that control for the measurement error of the instrument.

Self-reported comorbid symptoms were to a limited degree related to outcome for self-help intervention for the treatment for SAD and PD. This finding is opposed to the assumption that comorbid symptoms will reduce the effect of self-help interventions (Mains & Scogin, 2003). One should note that these findings are in line with previous

research on predictors in face-to-face CBT treatments for SAD and PD (Eskildsen et al., 2010; Kampman et al., 2008).

A high credibility rating was related to better outcomes in unguided self-help for SAD, but this association was not found in the guided self-help group. This finding indicates that program credibility is more central when an unguided self-help approach is used, at least on short-term base, than for a guided self-help approach. This finding suggests that patients who perceived the unguided self-help to match his or her difficulties and needs, as assessed by the credibility measure, gained better treatment effect from unguided self-help than those who perceived unguided self-help as less credible. This can also be understood as a function of motivation and a readiness to change as those with less motivation and readiness to change probably would find any treatment less credible. It also may indicate that patients who rated the intervention as credible had a conceptualization of their anxiety problems congruent with the content of the self-help intervention (e.g. Dozois, Westra, Collins, Fung, & Garry, 2004). Finally, the association between unguided self-help and credibility may be seen as a parallel to the effect of alliance as defined by Bordin (1983), as a high credibility rating may be seen as equivalent to agreement of goals and means in the working alliance.

It has, however, been reported findings that are opposite to the present findings as credibility of self-help for SAD was related to outcome in guided self-help, but not in unguided self-help (Titov, Andrews, Choi, et al., 2008). Apart from the dissimilarities in the self-help interventions, these differences may also be due to differences in procedures used to measure credibility. Titov and colleagues (2008) assessed credibility prior to treatment, whereas the present study assessed credibility one week into treatment (Furmark et al., 2009). The latter method may have led to a more experienced-based and therefore realistic evaluation regarding treatment credibility and expectation of improvement from this particular treatment.

The results presented above indicate some inconsistent findings regarding predictors of outcome, and reflect the inconclusive findings in this field of research (Eskildsen et al., 2010; Kampman et al., 2008). These inconsistencies may be related to methodological

and conceptual limitations in many of the existing predictor studies. Small samples, differences in measures used, statistics, and design are all suggested as possible explanations for this (Eskildsen et al., 2010; Kampman et al., 2008; Melville et al., 2010). However, well conducted and large scale treatment studies focusing on predictors (Borge et al., 2010) and moderators (Mattson et al., 1998) have given surprisingly few strong and stable results. It has been suggested that future predictor studies should include more tailored and theoretically derived predictors relevant for the diagnosis and treatment in question (Andersson, Carlbring, et al., 2008b).

3. 3 Few Professionals Use Self-help as an Alternative to Face-to-face Contact

The knowledge and use of self-help interventions for the treatment of anxiety and depression among clinical psychologists working in mental health services was examined, because these factors are relevant to the future accessibility of self-help interventions in mental health services. The psychologists in the present survey reported a frequent use of self-help, but mainly as an adjunct to face-to-face contact. This finding is congruent with studies regarding professionals' use of self-help methods (Keeley et al., 2002). Furthermore, the results indicate that the majority of the psychologists were unfamiliar with or did not use self-help interventions as an alternative to face-to-face contact. Also a lack of knowledge about the effects of self-help materials was reported, and a large proportion - 40% - of the psychologists was uncertain about the possibility of a potential harm to patients from using self-help interventions. Self-help interventions via Internet were used by 2% of the psychologists. These results are similar to what have been reported on professionals' use of self-help interventions, including Internet-based interventions (Mora et al., 2008). Based on the documented effects of self-help and clinical guidelines that recommend self-help as an alternative to therapist contact in many countries, the results indicate that self-help as an alternative to therapist contact is underused by psychologists in the mental health services. However, as will be discussed in the Methodological Considerations and Limitation section, it should be noted that the results from the present survey may be biased due to the study sample.

Psychologists in the survey who recommended self-help materials more frequently were familiar with self-help through their use of self-help materials to enhance own therapy skills. More frequent recommendations of self-help were also associated with previous training in self-help. The theoretical orientation most strongly associated with recommendations of self-help materials was CBT, whereas psychologists with psychodynamic and psychoanalytic orientations recommended self-help less frequently, a pattern comparable to that found in a previous study (Mora et al., 2008). The latter may be explained by the fact that most self-help materials builds upon a CBT orientation (Campbell & Smith, 2003). Moreover, it has also been suggested that psychodynamic and psychoanalytically-oriented therapists may evaluate such materials as overly technical or simplistic (Norcross, 2006).

The limited knowledge and use of self-help interventions in mental health services may be the result of several factors. First, it may reflect the simple fact that most self-help interventions, including Internet/ computer-based self-help, have not been introduced and evaluated in ordinary mental health services (Cavanagh et al., 2006). This may maintain professionals' uncertainty of the effect and potential harm of self-help intervention in such a setting. Second, even though several self-help interventions have been documented as effective throughout the last decade, these studies may be unfamiliar to most of the clinicians. Third, the findings may also reflect that there is a limited knowledge about predictors of treatment outcome from effective self-help interventions. Regarding the latter it is suggested that a lack of knowledge among clinicians about predictors of outcome is a barrier to dissemination of new treatments. This may be related to clinicians concern about how "my patient" responds to a particular intervention. Fourth, professionals may not believe that the use of self-help interventions will increase the quality of their services. The latter interpretation is supported by the "Unified theory of acceptance and use of technology" (Venkatesh, Morris, Davis, & Davis, 2003). This theory states that professionals' actual use of new technology or method is predicted by how they expect the new technology or method to be able to improve their services (Venkatesh et al., 2003).

Taken together, present findings regarding the limited knowledge and low use of self-help interventions in mental health services highlights the challenges the field of self-help may face when the next phase of dissemination and implementation are to be launched in mental health services unfamiliar with self-help as an alternative to face-to-face contact.

3. 4 Methodological Considerations and Limitations

There are several potential threats to reaching valid conclusions in the present work and the following potential threats and limitations will be discussed in the following sections; threats to internal validity, threats to statistical conclusion validity, and threats to external validity (Kazdin, 2003).

3. 4. 1 Threats to internal validity.

For Papers I and II, internal validity refers to how the reported studies were conducted and if the design makes it possible to exclude the likelihood that other uncontrolled factors may have caused the pre-post change. In Paper III, the cross-sectional design survey, internal validity simply refers to how well the study was conducted.

History.

The lack of a control group is the main threat to internal validity of Paper I. Due to the open pre-post design, the observed effects in this study may be explained by the passage of time, maturation, or other extra-treatment events, and not the treatment as such. However, it is possible to argue that it is less likely that external factors caused the pre-post change in patients with PD. First, the average duration of PD-symptoms in the sample was twelve years and the majority (85%) previously had received medical and/or psychological treatment for PD. Secondly, the stability of symptom improvement from post-treatment to six-month follow-up makes it reasonable to attribute the reduction in symptom level to the intervention, and not merely passage of time, maturation, or other extra-treatment events.

Statistical regression.

Regression towards the mean refers to the fact that due to random sampling error, extreme scores are drawn closer to the mean with repeated measures. This phenomenon may represent a threat to valid conclusions in Paper I because the study did not include a comparison group, controlling for the possible effect of regression towards the mean. Furthermore, the regression toward mean is more of a problem when reliability of the measure is low. For Paper I, the interpretation of pre-post changes in the Agoraphobic Cognition Questionnaire (ACQ) was more difficult as this measure had a relatively low reliability. However, the reduction observed in the ACQ was probably due to treatment effect as the self-help intervention had a strong emphasis on agoraphobic cognitions and avoidance, and exposure to agoraphobic settings, i.e. the fear of fainting or losing control when experiencing panic symptoms away from home.

The direction of causal influence.

The potential problem of causal inference is relevant to Paper III as this problem had a cross-sectional and not a repeated-measure design. Therefore no causal inferences should be made regarding the associations identified in the study. However, the previous studies may suggest the direction of causality. Supplementary qualitative data could also have suggested causality of the data. However, such data was not included, and was the main limitation in Paper III.

Self-report.

The main inclusion criteria, the diagnosis of SAD or PD according to DSM-IV as the primary problem, were assessed by a face-to-face or telephone SCID I interview with a clinician at pre-treatment in Paper I and II. However, post-assessment and follow-up on both papers relied mainly on self-rated symptom of diagnostic questionnaires, and effect sizes were based on self-report only. Results may have been different with clinician rated symptoms as self-reported and clinician rated symptoms often have low inter-correlations (Cuijpers, Li, Hofmann, & Andersson, 2010; Kiluk et al., 2011).

Furthermore, some studies suggest that self-reported symptoms yielded lower effects compared to symptoms, and indicate that the present results may be a too conservative estimate of the treatment effects (Cuijpers, Li, et al., 2010).

Paper I used the Clinician Severity Rating (CSR) as an indicator of PD-severity in the predictor analyses and found no association with outcome, whereas Paper II used self-reported symptom severity of SAD and found associations with outcome across several measures. This difference may be due to the fact that self-reported symptom severity is a better predictor of outcome compared to clinician rated symptom severity. In this case, however, the difference may be explained that the PD severity measure had a limited range (4-8) whereas the SAD severity measure had a much wider range (SIAS: 9-78; SPS: 5-74).

Paper III relied solely on self-report regarding knowledge and use of self-help. Surveys of self-report methods are associated with an uncertainty as to whether answers reflect actual behavior or whether they reflect what are perceived as professionally and socially desirable answers. Likewise, it cannot be ruled out that the distribution of the present survey through the NPA, which then had a mental health policy that strongly emphasizes low-intensity and self-help interventions, may have led to biased answers. On the other hand, using a self-report format enabled us to reach psychologists throughout the country and thereby to obtain a broad picture of the use of self-help materials among psychologists working in mental health services in Norway.

3. 4. 2 Threats to statistical conclusion validity.

Low statistical power.

Low statistical power is a common threat to the generation of valid conclusions in clinical trials due to low sample sizes, unreliable measurers or variability of procedures. Low statistical power increases the risk of not detecting differences between groups when differences exist within the population. The lack of statistical power has been of special concern in the predictor-literature, and may be one of the reasons for the inconclusive findings from this area of research (Eskildsen et al., 2010;

Kampman et al., 2008). Especially should results from the predictor-analysis in Paper I be interpreted with caution as N = 27 indicate statistical power that only allow for detection of strong associations. However, this was improved in Paper II as this is the predictor study in the field of self-help with the greatest sample, with enough statistical power to detect small and moderate association.

In Paper II however, we cannot exclude the possibility that variability of the procedures for recruiting patients, assessment procedures and so on may have reduced statistical power. However, this was not the case in present study apart from the fact that Internet treatments for SAD were more established when the most recent Furmark et al. (2009) study was conducted. However, including different samples may be a strength to this study because it provides us with a comparatively large sample and has the power to detect both small and moderate effects.

Error rate problem.

Moreover, there is an error rate problem in predictor analyses as the probability of drawing erroneous conclusions increases with number of conducted tests. The rule of thumb is to have a sample size of N = 15 for each predictor tested (Cohen & Cohen, 1983). The error rate problem may lead to the indication of a significant association between variables that are not truly associated, but are significant by chance due to the number of tests. However, the inclusion of more predictors than recommended due to the number of participants in Paper I was justified by the fact that there was a lack of knowledge about predictors in self-help in general and self-help interventions for PD in particular (Andersson, Carlbring, et al., 2008b). However, the error rate problem suggests that the observed association should be replicated before any firm conclusions may be drawn.

Reliability of measures.

Results from present thesis were derived from measures that are widely accepted and used in international SAD and PD research and with documented and reported psychometric qualities (Chambless, Caputo, Bright, & Gallagher, 1984; Chambless,

Caputo, Jasin, Gracely, & Williams, 1985; Mattick & Clarke, 1998). However, reliability may differ across study samples. The majority of the measures used in Paper I had satisfactory reliability; the weakest was ASQ with an alpha of 0.69, considered as a low, but adequate reliability.

The reliability of measures was not reported in Paper II as this information was not available from the original studies. However, the reliability of the used measures within the same setting, the same research group, and in the same format (Internet) has been reported as reliable (Hedman et al., 2010). The latter is important as assessments before, during, and after Internet interventions increasingly are done at the Internet.

Handling missing data.

The intention to treat analyses were conducted in Papers I and II, in which missing data was handled by the "last observation carried forward (LOCF)" method. LOCF has been recommended as it gives a more conservative estimate on the outcome compared to analyses based on a completer sample (Abraham & Russell, 2004). LOCF assumes that non-completers did not change from the former assessment point, and have been a popular and frequently used statistical analysis method when facing missing data in clinical trials (Blankers et al, 2010). More recently LOCF has been criticized as a procedure that also may lead to too liberal estimates of effect (Blankers, Koeter, & Schippers, 2010; Kiluk et al., 2011). However, it may be argued that LOCF is a conservative method for handling of missing data if patients drop-out early in treatment, as was mainly the case in Paper I. Then the assumption about no improvement since pre-assessment may be more accurate, and give a conservative estimate. However, when patients drop-out late in treatment or between post-assessment and follow-up, then the assumption about no change is less accurate, and LOCF may give a too liberal estimate.

In predictor analyses the LOCF method reduces variance in the outcome variable. In Paper I, with a drop-out rate of 26% in a sample of N = 27, the LOCF may have reduced the outcome variance, and may have masked the associations between predictors and residual gain scores. However, in Paper II, with a very low drop-out

rate in a sample of N = 245, the missing data procedure had minimal impact on outcome.

3. 4. 3 Threats to external validity.

Procedures and methods have an impact on the generalizability of research findings. This phenomenon is of special relevance to clinical trials as the aim of these studies is to improve access to effective treatments in the clinic.

Selection bias (interaction between selection and treatment).

Selection bias has been a major issue in clinical research. Concerns have repeatedly been put forward regarding the representativeness of participants in research trials to patients in ordinary health clinics (Shafran et al., 2009).

Results reported in Paper I and II both relied on self-referred samples. This may have led to a bias as self-referred samples are suggested to be different than patients seen in the clinic. Patients in research trials are selected based on inclusion and exclusion criteria such as symptom severity, comorbidity, and previous treatment. Furthermore, patients who enter research trials have been willing to accept randomization and may be more motivated and more willing to take risks. Together, these differences may inflate the outcomes in a self-referred sample compared to samples in ordinary mental health settings and reduce generalizability.

However, a meta-analysis of effects reported of CBT in the ordinary clinic shows that CBT is as effective in efficacy trials as in effectiveness trials for SAD, whether the effects are higher in efficacy trials for PD (Stewart & Chambless, 2009). Only a few self-help effectiveness trials have been conducted (Bergstrom et al., 2010; Cavanagh et al., 2006; Tillfors et al., 2008). These studies showed that the intervention remained effective in ordinary clinical settings (Bergstrom et al., 2010; Cavanagh et al., 2006; Tillfors et al., 2008).

Sample bias may also have affected the findings in the predictor analyses reported in the thesis due to a limited variance of in a self-referred sample. Greater variation in

comorbid disorders and symptoms may have yielded different results. Therefore, the finding needs to be replicated with samples recruited from ordinary mental health clinics, if results are to be generalized to this population.

However, limitations regarding generalization of a self-referred sample may be less of a problem because self-referrals to self-help interventions may be the rule and not the exception. Self-help is suggested as an early low-threshold intervention that can be offered to patients before chronicity and comorbidity is developed. Self-help as a low-threshold service is currently offered in the Improving Access to Psychological Therapies (IAPT) initiative. IAPT has examined the consequences of self-referrals and found that self-referred patients have similar severity and duration of symptoms as patients referred from the ordinary health system, i.e. general practitioners. Furthermore, self-referred patients in the IAPT initiative are more representative in regard to ethnicity compared patients referred from the health system (Brown, Boardman, Whittinger, & Ashworth, 2010).

Furthermore, self-help interventions will probably not be a standard treatment within specialized mental health services where mainly severe and chronic disorders are prioritized. This is line with the findings from Paper III where professionals in mental health services to a limited degree used self-help as an alternative to face-to-face contact. Therefore, outcomes from the self-referred sample in present thesis may be generalizable to other self-referred samples.

A response rate of 43% in Paper III may be a barrier to the generalizability of the findings, as is the fact that the study sample was both younger and had graduated longer ago than the total NPA population. It is therefore possible that the Norwegian Psychological Association (NPA) members who did not participate in the study would have reported patterns of self-help use that differ from the present results.

3. 5 Ethical Considerations

All studies in the present thesis were approved of by ethics committees in Norway or Sweden. This indicates that the consent forms, contact with the patients, the use of

data, and the treatment protocol was planned and conducted according to ethical research norms.

More specifically, there are a number of ethical concerns regarding self-help interventions that should be mentioned. First, there is a lack of knowledge about potential adverse events related to the use of self-help. As reported by the respondents in the survey, this may leave professionals insecure about potential harmful effects of self-help interventions. Such adverse effects have up to this point not been reported in the self-help literature, but needs to be attended to (Kiluk et al., 2011). Second, security when using Internet for treatment purposes is of vital importance in order for Internet interventions to be acceptable for patients, professionals and health authorities. As reported from the Norwegian setting in Paper I, less interactivity during the intervention in the Norwegian setting compared to the Swedish setting were due to Norwegian regulations at the time of the study. However, security at the Internet is a rapidly evolving field as the possibilities, risks, and solutions to this matter changes as the technology evolves. This indicates that security must be carefully monitored.

Ethical considerations when offering low-intensity interventions have also been discussed in the self-help literature (Marks et al., 2007). A major concern of professionals has been the possibility of not detecting deterioration during the intervention (Mora et al., 2008). One way to handle this is specifically to exclude patients who reports suicidal ideation, as was done in Paper I and II. Monitoring during the intervention is another way to detect deterioration, either through automated or personal assessment.

It has also been questioned whether some patients are not suited for low-intensity interventions e.g. self-help via the Internet. A special attention toward the reading level required in order to read and understand text-based self-help interventions are needed. Interventions rich in text may be most suitable for those with higher education (Marks et al., 2007), whereas interventions with less text and more use of video-, audio-, and animations may be more accessible to those with a lower reading level.

So far no data indicate that self-help is not suitable for some populations. On the contrary, it has been reported findings about unexpected positive effects i. e. that unguided self-help is effective for patients with a serious disorder such as SAD (Furmark et al., 2009; Titov, Andrews, Choi, et al., 2008). However, populations with little or no benefit from self-help interventions may be identified as self-help interventions are disseminated and implemented to new settings and populations.

3. 6 Implications for Dissemination

With the potential threats to valid conclusions and limitations in mind, the findings from present thesis have implications for future dissemination of self-help interventions.

First, participants in Paper I and II reported a history of complaints on average for 12 years for PD and one of the Swedish SAD trials participants reported a history of complaints for SAD for more than 20 years (Andersson et al., 2006). As both PD and SAD are associated with severe impairment, this represents a considerable burden for the individual and the society as a whole. This underlines the importance of making low threshold interventions available to those who suffer from SAD and PD.

Second, the documented transportability of the guided self-help intervention for PD supports the robustness of the program. This also gives promise for Munoz' notion "Think globally, act locally, and share globally" (Munoz, 2010, p. 6). There are several reasons for this being a good strategy; due to high costs of developing and testing Internet-based interventions, a continued use of programs will increase long-term cost-effectiveness (Munoz, 2010). Furthermore, transportability increases the reach of the intervention in question. This indicates that a greater proportion of the population who may benefit will have access to the intervention (Bennett & Glasgow, 2009). Finally, successful translation of Internet interventions have the potential to decrease barriers to health care utilization for minority populations (Brown et al., 2010; Munoz, 2010), and provide evidence-based interventions in moderate- and low-income countries (Munoz, 2010). However, data from present thesis also suggested that less experience, support and feedback during self-help interventions may decrease

effect and increase attrition-rate, and needs to be attended to future dissemination efforts of Internet-based self-help interventions.

Third, the information about predictors of outcome from self-help interventions for SAD and PD may facilitate implementation of self-help interventions among professionals (Kazdin, 2001). Knowledge about predictors also indicates to what extent self-help interventions may be effective to a wider population of those who suffer from SAD and PD. We did not find that higher age was a barrier to treatment effect, however as hypothesized, symptom severity was negatively associated to outcome. If this finding is replicated in future trials, it has implication for future dissemination efforts. One implication is that patients with more severe symptoms may require closer monitoring during the self-help intervention and should be offered face-to-face treatment if expected effect is not gained during the self-help intervention. This may be provided within a stepped-care treatment model (Bower & Gilbody, 2005) as a stepped-care treatment can reach more patients, and also provide a "safety-net" for those who do not gain expected treatment effect from a low-intensity intervention (Bower & Gilbody, 2005). In stepped-care models patients first receive the most efficient and least intensive intervention. If a patient do not gain expected improvement from the least intensive intervention, the patient "step up" to a more intensive intervention, and so on. As indicated, this model requires closely monitoring of symptoms, functioning or improvement in order to decide when to "step up" a patient to the next and more treatment intensive treatment-level.

The finding that comorbid symptoms had a limited association with outcome are important as self-help interventions often are thought to be feasible mainly for patients with mild to moderate symptoms without comorbidity. If this finding is replicated, it indicates that self-help interventions may be offered on a larger scale. However, if self-help programs should be found to be somewhat restricted by comorbidity or comorbid symptoms, there is still a large population of individuals with anxiety disorders that can benefit from these programs.

The association between credibility and outcome of unguided self-help suggests that patients should be informed about the existence and potential effect of both guided and unguided self-help. Furthermore, the findings indicate that unguided self-help can be offered as a potentially effective treatment option to patients who for various reasons prefer unguided self-help. As indicated elsewhere, there is a belief that this may be the case more often in patients with SAD than in patients with other anxiety disorders (Furmark et al., 2009).

Finally, data from the survey and the dissemination literature indicate that there is a need for training and supervision in self-help intervention in order to facilitate implementation (Fixsen et al., 2005; Shafran et al., 2009). Training and supervision in self-help should be especially concerned with the following questions: What are the benefits and downsides of self-help interventions in mental health services? For whom may self-help be effective? How and when should treatment gains be assessed? And what format of self-help is effective for various populations?

3. 7 Implications for Future Research

The field of self-help have had a remarkable expansion in quantity and quality the last decade, with documented treatment effect of self-help interventions for a number of mental health disorders. However, as illustrated in this thesis, these findings have provided new questions to the field of self-help (Marks & Cavanagh, 2009). In order to further stimulate and facilitate developments in the field the following issues needs to be attended to.

3. 7. 1 Predictors.

Many of the existing predictor studies are criticized for choosing arbitrary predictors in the analyses, mainly included due to its relevance in effect studies, and not for its relevance to predictor analyses (Eskildsen et al., 2010; Kampman et al., 2008).

Drawing from the literature regarding homework compliance as a predictor of positive outcome, several patient characteristics are suggested to be related to the capacity to carry out therapeutic tasks between sessions (Helbig & Fehm, 2004; Mausbach,

Moore, Roesch, Cardenas, & Patterson, 2010). The ability to actively seek help and support when encountering problems during the self-help intervention may be one factor, related to the concept of self-efficacy. Motivation and the ability to plan and structure tasks may be relevant predictors of outcome in self-help (Yovel & Safren, 2007). However, it is not clear whether i.e. motivation affects homework compliance or if homework compliance affects motivation (Helbig & Fehm, 2004). In line with the above did our findings indicate that credibility is a relevant predictor for unguided self-help.

Another set of potential predictors of outcome are related to the intervention itself. As described in the Behavior Change Model for Internet Intervention (Ritterband, Thorndike, Cox, et al., 2009) the appearance of the material, provision of behavioural prescriptions, required reading level, and tailoring of the intervention are proposed as predictors of utility of the intervention.

Taken together, future research on predictors of outcome in self-help interventions should examine if there are specific predictors for specific patient characteristics for specific forms of self-help (Andersson, Carlbring, et al., 2008a), back to the old what works for whom.

3. 7. 2 Attrition and adherence.

Attrition has been a major concern in the self-help literature, and “the law of attrition” as stated by (Eysenbach, 2005), is closely linked to self-help. Attrition from unguided open access Internet interventions have been reported to be 99% (Christensen et al., 2009). However, little is known about the effect and use of self-help interventions among those who end treatment prematurely or do not attend post-assessment (Eysenbach, 2005). It is suggested that the relationship between attrition, drop-out and effect in self-help interventions may be different from face-to-face where drop-out often is associated with lack of effect (Bennett & Glasgow, 2009).

3. 7. 3 Development of interventions.

As stated in the introduction, there is no consensus about what a self-help intervention includes, its format, or how it is delivered. This may reflect the difference that exists among self-help interventions; some are text-based and presented in a book or via the Internet and supported and tailored through human contact through email or telephone (i.e. Carlbring et al., 2007), whereas others are fully automated Internet interventions that are graphically rich, include video-and audio tapes, have engaging tasks, and provide support and tailoring through interactive feedback based on patient input (i.e. Ritterband, Thorndike, Gonder-Frederick, et al., 2009).

At the present, self-help interventions are broadly categorized as guided or unguided self-help, referring to live human support. However, new technology, accessible to the majority of the population in the Western world, makes it possible to provide automated tailored support and feedback based on patient input. As demonstrated by Titov and colleagues (2009) automated feedback and reminders may successfully replace human contact in the course of a self-help intervention. In their Internet-based CBT intervention for SAD, human contact have been reduced from 2 ½ hours to 40 minutes without any deterioration of effects (Titov, Andrews, Schwencke, et al., 2009). This illustrates that guidance may not primarily be about human contact or not, but more related to receiving an intervention which is tailored, responsive, and easy to understand.

3. 7. 4 Effectiveness and cost-effectiveness.

Effectiveness studies of self-help interventions are needed in order to examine the effects of these interventions in ordinary clinics with samples with increased variance in regard to i.e. symptom severity, and comorbidity (Cuijpers, Donker, et al., 2010). Furthermore, adherence may be facilitated by research settings (Christensen), and it is vital to examine adherence to self-help interventions outside research trials.

Cost-effectiveness studies are requested in the self-help literature (McCrone et al., 2004). It is assumed that effective self-help interventions also are cost-effective as they

require less of therapists' time. However, few self-help studies have reported cost-effectiveness. Calculation of cost-effectiveness would need to include costs related to development of the intervention, testing, and monitoring during the intervention, patients symptom improvement, and patients health care utilisation during and after the trial.

3. 7. 5 Organization of self-help.

Finally, future research need to attend to how self-help interventions can effectively be organised in order to fulfil the ambition of improving access to effective psychological interventions through self-help interventions (Bennett & Glasgow, 2009). Self-help may be a first or second step in stepped-care treatment model (Richards, 2004). However, our data do not suggests that unguided self-help should precede guided self-help as a forced stepped one, but rather that the two interventions both can be offered as a first step.

A vital and unresolved problem regarding stepped-care models is to decide when to "step-up" (Bower & Gilbody, 2005). Should a patient be stepped up mid-way in the intervention if no treatment gains are obtained, or should the decision be taken at the end of the intervention? Another question is how lack of treatment gain during an earlier step influence motivation and expectancy for improvement on a later step (Bower & Gilbody, 2005). Answers to these questions may facilitate the possibility for stepped care models to increase access to psychological interventions.

3. 8 Conclusion

Present thesis supports the notion that self-help is an effective and acceptable intervention for patients with SAD and PD. However, treatment effects and use of self-help differ across settings and populations. In order for self-help interventions to be able to address the unmet need for psychological interventions, future dissemination and research need to include factors that are associated with the treatment effect and use of self-help interventions.

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