



## Internet administered guided self-help versus individualized e-mail therapy: A randomized trial of two versions of CBT for major depression

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### ABSTRACT

Internet-delivered psychological treatment of major depression has been investigated in several trials, but the role of personalized treatment is less investigated. Studies suggest that guidance is important and that automated computerized programmes without therapist support are less effective. Individualized e-mail therapy for depression has not been studied in a controlled trial. Eighty-eight individuals with major depression were randomized to two different forms of Internet-delivered cognitive behaviour therapy (CBT), or to a waiting-list control group. One form of Internet treatment consisted of guided self-help, with weekly modules and homework assignments. Standard CBT components were presented and brief support was provided during the treatment. The other group received e-mail therapy, which was tailored and did not use the self-help texts i.e., all e-mails were written for the unique patient. Both treatments lasted for 8 weeks. In the guided self-help 93% completed (27/29) and in the e-mail therapy 96% (29/30) completed the posttreatment assessment. Results showed significant symptom reductions in both treatment groups with moderate to large effect sizes. At posttreatment 34.5% of the guided self-help group and 30% of the e-mail therapy group reached the criteria of high-end-state functioning (Beck Depression Inventory score below 9). At six-month follow-up the corresponding figures were 47.4% and 43.3%. Overall, the difference between guided self-help and e-mail therapy was small, but in favour of the latter. These findings indicate that both guided self-help and individualized e-mail therapy can be effective.

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### Introduction

Major depression is widely acknowledged as a major health problem, with adverse consequences in terms of loss of productivity and lowered quality of life (Ebmeier, Donaghey, & Steele, 2006). Several psychological treatment options exist showing fairly equivalent outcomes (Cuijpers, van Straten, Andersson, & van Oppen, 2008), and evidence suggests that psychological treatments for mild to moderate depression are about equally effective as pharmacological treatments (Cuijpers, van Straten, van Oppen, & Andersson, 2008). When equal effects are found other aspects become relevant when making decisions about treatments for

depression. One issue concerns patient preferences, as patients often prefer psychological treatments (Leykin et al., 2007; van Schaik et al., 2004), even if treatment preferences *per se* do not need to have an impact on outcome (Leykin et al., 2007). Another issue concerns costs and cost-effectiveness of the treatments (Hargreaves, Shumway, & Hu, 1999). Yet another concern relates to access to the treatment. With increasing demand for psychological treatments, guided self-help approaches have been developed showing promising outcomes (den Boer, Wiersma, & Van den Bosch, 2004). A recent promising and potentially cost-effective treatment format involves delivering cognitive behaviour therapy (CBT) over the Internet (Andersson, 2009; Barak, Klein, & Proudfoot, 2009). Internet-delivered CBT for major depression has been tested in a number of trials, with varying outcomes from promising (Andersson et al., 2005; Christensen, Griffiths, & Jorm, 2004; Kessler et al., 2009; Meyer et al., 2009; Perini, Titov,

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& Andrews, 2009; Spek, Nyklicek et al., 2007), to somewhat less effective or not effective at all effective against no treatment or treatment as usual control groups (Clarke et al., 2005; Clarke et al., 2002; de Graaf et al., 2009; O'Kearney, Gibson, Christensen, & Griffiths, 2006). The effects of Internet-delivered CBT were summarized in a meta-analysis showing a moderate between-group effect size of Cohen's  $d = .40$  (Spek, Cuijpers et al., 2007). However, the same authors and others noted that self-help programmes in which support was provided ( $d = .61$ ) were more effective than programmes without support ( $d = .25$ ) (Andersson, 2006; Andersson & Cuijpers, 2009), and more recent trials support this observation (de Graaf et al., 2009). There may also be other differences between the guided and unguided treatments. For example, the guided treatments tend to be more comprehensive and longer. Indeed, one exception is a recent trial on unguided treatment which included a more comprehensive treatment programme and found a moderate effect size of  $d = .64$  (Meyer et al., 2009). However, while support increase effects it is associated with more costs (Palmqvist, Carlbring, & Andersson, 2007). As a correlation of  $\rho = .75$  has been observed between the amount of therapist contact in minutes and effect size (Palmqvist et al., 2007), the input from the therapist in the form of individualized e-mails deserve a more careful test. While the literature on pure e-mail therapy is limited, it is a form of therapy that has been practiced on the Internet for more than 10 years (Murphy & Mitchell, 1998) and sold by private practitioners (Manhal-Baugus, 2001). There are no published controlled trials on pure e-mail therapy for depression. However, the border between purely e-mailed based therapy and guided self-help programmes in which individualized therapist input is added is not sharp, and for example one programme called "Interapy" for symptoms of post-traumatic stress (Lange et al., 2003) adds more therapist time than in most guided self-help programmes. Interapy has also been tested for depression with a promising outcome (Ruwaard et al., 2009). There is also an emerging literature suggesting that factors such as therapeutic alliance can develop in Internet treatments (Knaevelsrud & Maercker, 2007) and in e-mail therapy (Cook & Doyle, 2002). In sum, the literature on the role of the therapist in guided self-help and the lack of robust studies on e-mail therapy suggests that it is not known how effective the individualization inherent in e-mail therapy is. Moreover, it is not known if e-mail therapy yields different outcomes than guided self-help in which minor guidance is given.

The aim of this study was to study the effects of structured guided self-help for depression with minimal therapist contact (Andersson et al., 2005) and e-mail therapy with a strong component of individualization. A waiting-list control group was also included against which the two treatments were compared. The two active treatments were both based on CBT, which in this case involved both components of behavioural activation (Martell, Addis, & Jacobson, 2001), and cognitive therapy as initially described by Beck (Beck, Rush, Shaw, & Emery, 1979).

## Method

### Participants and recruitment

Participants were recruited for participation in a research study on Internet treatment for depression by means of newspaper articles in national and regional papers, a national radio interview regarding the study, posters at the University campus, and information on various web pages. A web page was created that included an outline of the study, information about CBT in general, a short presentation of the people involved in the study and the possibility to sign up for the study. Signing up for the study also

required completion of four computerized questionnaires: Beck Depression Inventory (BDI) (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961), Montgomery Åsberg Depression Rating Scale-Self Rated (MADRS-S) (Svanborg & Åsberg, 1994), Beck Anxiety Inventory (BAI) (Beck, Epstein, Brown, & Steer, 1988), and the Quality of Life Inventory (QOLI) (Frisch, Cornell, Villanueva, & Retzlaff, 1992). We also included 23 other questions concerning demographic variables, prior treatment, medication and expectations about the treatment. The outcome measures have good psychometric properties even when administered via the Internet (Carlbring et al., 2007).

Participants who fulfilled the initial inclusion criteria according to a computerized screening were called to a live meeting where they were interviewed using the Structured Clinical Interview for DSM-IV – Axis I disorders, clinical version (SCID-I-CV) (First, Gibbon, Spitzer, & Williams, 1997). Six undergraduate students and a PhD student who all had been trained in using SCID-I conducted the interviews. A psychiatrist then assessed the SCID protocols after the interviews. Two short memory tests were also included in the interview: the Autobiographical memory test (Williams & Broadbent, 1986) and the Future thinking task (MacLeod, Rose, & Williams, 1993). The results are not presented here and will be presented in separate publications. Participation in the study was free of charge and neither was any reimbursements given for participation.

A total of 280 persons signed up for the study. Criteria for inclusion were (a) being at least 18 years, (b) a total of  $<31$  on MADRS-S, (c) a total of  $>14$  on MADRS-S, (d)  $<4$  on Item 9 (suicidal thoughts) on MADRS-S, (e) no medication for depression or unchanged dosage of medication for depression during the last month, (f) not participating in other treatment for depression at the time, (g) not having other primary disorder that needed different treatment or that could be affected negatively by the treatment, (h) being diagnosed with major depression according to DSM-IV.

Out of the 148 who met inclusion criteria a–g, 25 persons did not want to participate or could not be included for other reasons. Out of the 123 persons that were booked for an interview, 23 persons did not show up and 12 were excluded after the interview (see flow chart in Fig. 1). A total of 88 persons met inclusion criteria a–h and were randomized to one of three groups.

There were 32% ( $n = 28$ ) men and 68% ( $n = 66$ ) women. The mean age was 37 years ( $SD = 12.9$ ). Half of the participants ( $n = 47$ ) had a prior history of psychological treatment. See Table 1 for additional demographical information. Seventy six percent ( $n = 67$ ) of the participants had more than one prior episode of depression and 38% ( $n = 33$ ) had another diagnosis according to DSM-IV. Thirty three percent ( $n = 29$ ) had at least one co-morbid anxiety disorder.

The dropout rate was low from pre- to posttreatment. Only 3% ( $n = 3$ ) did not complete the posttreatment questionnaires. Dropout from posttreatment interview was 14% ( $n = 12$ ). Eighty five percent ( $n = 75$ ) filled out the six-month follow-up questionnaires, resulting in a dropout rate of 15% ( $n = 13$ ). Eighty four percent ( $n = 74$ ) participated in the follow-up interview.

### Therapists

Six psychology M.Sc. students who had completed their clinical training and were in their last term served as therapists for both treatment groups. They also treated the waiting-list group. Therapists were randomly assigned to participants in each group. Each therapist was responsible for five participants in each group. In the guided self-help treatment, therapists contributed with passwords to text modules and positive reinforcement on the progress made by participants. In the e-mail therapy condition, the therapists had

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