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What Makes Internet Therapy Work?

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Abstract. Internet therapy is a novel treatment approach that is used to deliver cognitive behaviour therapy. Treatment components are mainly delivered in the form of texts presented via webpages, and support is provided via e-mail. A growing number of controlled trials suggest that Internet therapy works well when (a) a proper diagnosis is made before the treatment starts, (b) a comprehensive treatment is provided, (c) the treatment is user friendly and not overly technically advanced, and (d) support and a clear deadline are provided for the duration of the treatment. Several issues remain for exploration in future research, such as mediating and moderating mechanisms and the role of tailoring the intervention. *Key words:* Internet therapy; guided self-help; web design; deadline effect.

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With modern information technology, new treatment opportunities have emerged. Access and use of new information technology have become a part of most people's everyday life, with about 70% of the Western world population (e.g. North America and Europe) having regular access to the Internet (Internet World Stats, 2009a, 2009b). People often consult the World Wide Web for information on health issues (e.g. Hesse et al., 2005) that affect themselves, family members, and others. In our research, we have integrated Internet with cognitive behaviour therapy (CBT) and developed an approach that could be regarded as "net-bibliotherapy." The approach was defined by Andersson et al. (2008) as follows:

A therapy that is based on self-help books, guided by an identified therapist which gives feedback and answers to questions, with a scheduling that mirrors face to face treatment,

and which also can include interactive online features such as queries to obtain passwords in order to get access to treatment modules. (p. 164)

There are now many controlled trials showing that this form of Internet treatment works (Andersson, 2009), but less work has been done investigating what the effective ingredients are and how the treatment can be disseminated into regular health care settings. In this article we briefly review the evidence, suggest conditions that foster better outcome following Internet therapy, and highlight research needs.

Brief review of the evidence

A growing body of evidence suggests that Internet therapy works. Although early trials suffered from methodological deficits, recent

trials increasingly adhere to the CONSORT statement, including using intention-to-treat analyses and having fewer dropouts in the trials (Moher, Schulz, & Altman, 2001). Spek, Cuijpers, et al. (2007) conducted a meta-analysis of 12 controlled trials in the field of anxiety and depression. Similarly, Cuijpers, van Straten, and Andersson (2008) conducted a systematic review on Internet-delivered CBT for health conditions such as chronic pain and tinnitus. Using the criteria of empirically-supported treatments suggested by Chambless and Hollon (1998), with at least two independent randomized controlled trials suggesting that the treatment works, there are several areas for which guided Internet treatment based on CBT could be regarded as empirically-supported (Andersson, 2009), including panic disorder, social anxiety disorder, post-traumatic stress disorder (PTSD), mild to moderate depression, and headache. Effect sizes tend to largely mirror the effects seen in face-to-face CBT therapies. Prerequisites are that support is given and that proper diagnostic instruments are used to include participants in trials. For example, in the meta-analysis by Spek, Cuijpers, et al. (2007), interventions for anxiety had a large mean effect size ($d = 0.96$). The results for mood disorder was lower ($d = 0.32$), but this was probably due to the fact that studies with no therapist support and no proper diagnostic assessment lowered the effect size. One study from Sweden was regarded as an outlier, because it had effects more similar to those found in the studies on anxiety disorders with a between-group Cohen's d of 0.90 (Andersson et al., 2005).

Another way to assess the effects of Internet therapy is to conduct direct comparisons with face-to-face therapy, which could be referred to as equivalence trials. There are a few direct comparisons in the literature, but some are in progress. For example, Carlbring et al. (2005) found equivalent outcomes of individual face-to-face CBT and Internet CBT for panic disorder. In a trial on depression, Spek, Nyklíček, et al. (2007) found no differences between live group treatment and Internet CBT. Kaldo et al. (2008) similarly found no differences between live group treatment and Internet therapy in a trial on patients with tinnitus. Generally, the treatment gains are maintained at follow-up and include a

36-month follow-up after Internet therapy for gambling problems (Carlbring & Smit, 2008).

The studies conducted to date have limitations. Dropout rates have been substantial in some early studies and also in trials without therapist guidance. Inclusion criteria have also varied, with some research groups using cutoffs on dimensional scales and others using clinical diagnostic interviews. In many studies, the amount of therapist contact has not been reported and time devoted to assessment and diagnoses has not been described. Data on cost-effectiveness are sparse, and it is not clear how much program development costs. The role of the support person/clinician is not well understood. In many of the Swedish trials, students under supervision have acted as therapists. It is not known how well this translates into real-life clinical situations, and overall there are few data on the effectiveness of Internet therapy when it is delivered by ordinary therapists. Furthermore, no comparisons have been made with pharmacotherapy or with combined treatments.

Four suggestions

It is not yet possible to determine what makes Internet therapy work. Predictors of outcome are scattered and rarely found (Andersson, 2009). Contrary to common belief, Internet therapy does not seem to work better for younger patients, the better educated, or male patients with high computer skills. Research might benefit from investigating moderators and mediators of change that are more specific to the treatment format. For example, preliminary observations suggest that early online activity in the programs is associated with better outcome. Inconclusive results have been found regarding client characteristics and therapeutic alliance, although there are exceptions (Knaevelsrud & Maercker, 2007).

We now turn to what we believe makes Internet therapy work and provide four suggestions for researchers and clinicians who plan to implement Internet CBT. These recommendations are not necessarily evidence based but originate from our own research, clinical experiences, and reading of the literature.

Suggestion 1. The most effective Internet treatments have targeted specific conditions

and well-diagnosed patients. This does not rule out that treatment programs could be tailored to specific needs, which is commonly done in face-to-face treatments. However, if the patient is diagnosed and screened for suitability of treatment, we believe that it is more likely that the treatment program will fit the patient's specific needs. For example, if a patient fulfils the diagnostic criteria for PTSD, a treatment that is written for persons with social anxiety disorder will not be suitable. Admittedly, there are overlaps between different CBT protocols, and a unified treatment approach could suit many (Barlow, Allen, & Choate, 2004). However, in the case of a specific text-based program, failure to match the patient with the right treatment is likely to lead to a less effective treatment. We have begun to explore whether Internet therapy can be tailored according to diagnostic profiles and whether clients can be treated according to the presenting symptoms instead of only relying on the diagnosis. In light of the vast comorbidity between many conditions (e.g. anxiety and depression), this approach could broaden the applications of Internet therapy. Preliminary evidence suggests that it is possible and that tailored programs can be delivered over the Internet. The important point is that diagnosis and proper assessment cannot be replaced by short self-report screening procedures on the Internet. We believe that in the case of psychiatric conditions such as panic disorder telephone interview is necessary to secure the diagnosis. Obtaining a diagnosis will inevitably make the process less time-efficient and more costly. However, using the telephone (or potentially web camera) retains the major advantage of being able to reach the client from a distance.

Suggestion 2. Although the content of self-help books based on CBT principles may share common elements and sometimes overlap extensively, we still believe that content coverage and pedagogical structure of text material, homework, and readability (e.g. complexity and graphics) influence the uptake of Internet therapy and its effectiveness. For example, a very brief intervention with a simple text and limited content might be suitable for prevention, but is less likely to work on its own as a proper treatment for depressive and anxious states. In spite of this reservation, briefer treatments could be useful

from a public health perspective, but they raise the question of whether it is really CBT. More extensive programs are less likely to miss important elements. In the case of panic disorder, one Australian research group went from a smaller program to a larger, extended one, which resulted in better effects (Klein, Richards, & Austin, 2006). Spacing of treatment modules might also be important. In their research on panic, Carlbring et al. went from a 6-week program to 10-week programs as a result of feedback from study participants who perceived the program as too condensed and stressful.

Suggestion 3. All people who use the Internet confront webpages that are not well organized. In a treatment program, webpages should be user-friendly and accessible for the patients as well as the clinician. Web design is probably not the most crucial element in Internet therapy, but technical problems, readability, and ease of navigation could influence adherence to the treatment. In the Swedish system, security issues have been important to consider because much information is exchanged between the client and the online therapist. For this reason, a secure contact system has been developed that shares many features of other similar secure systems (e.g. Internet banks). A secure contact system that requires log-in facilitates research because all correspondence is saved in one place. It is also preferable to e-mail contact using the patient's regular e-mail address because the correspondence is not saved on the patient's or the clinician's computer. Indeed, clinicians who practise online counselling by means of e-mail therapy should consider secure alternatives and not use their regular e-mail account. It is very likely that we will see web systems designed for clinicians in the near future. For example, homework assignments and feedback could be handled via a shared portal to which both the client and the therapist have access. Such a system could also be used to supplement the treatment by means of text material, links to important information sites, continuously updated online graphs of progress in treatment, and information on case conceptualisation that would be open and easily accessible to the client in such a system. Indeed, if Internet therapy is regarded as a complement to face-to-face therapy—and we believe it is—this

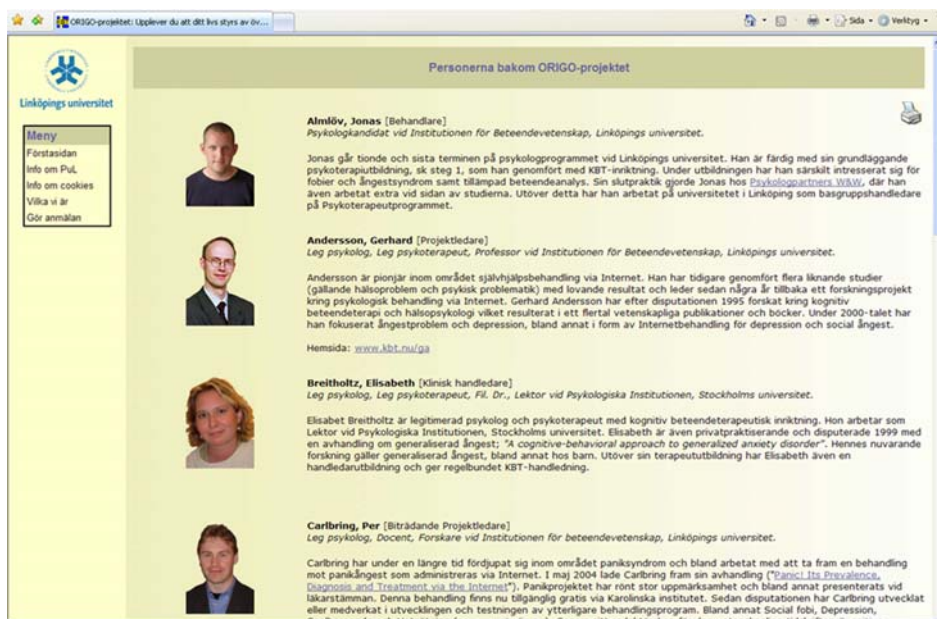


Figure 1. Screenshot of selected staff members involved in a Swedish trial on generalized anxiety disorder.

could be a way to take the best from two worlds (i.e. the regular clinic and the corresponding online system). Although we do not comment on group work in this article, there are treatments in which virtual groups are used (Golkaramnay, Bauer, Haug, Wolf, & Kordy, 2007). For some clients, this can be a rewarding experience, and indeed many live therapy clients are active in discussion groups anyway, in many cases probably without the therapist's knowledge.

Suggestion 4. Our final recommendation is probably the most important. Because the evidence clearly suggests that far from all components of CBT can be delegated to a computer, it is still the case that some form of minimal therapist support is needed for Internet therapy to work (Spek, Cuijpers, et al., 2007). In the case of depression, this appears to be clear, because studies with no human support tend to produce very poor results. In the meta-analysis by Spek et al., Internet interventions without support had a pooled mean effect size (Cohen's d) of 0.26, whereas intervention studies in which support was given had a mean effect size of 1.00. Our recommendation is, therefore, to include some form of therapist support either via e-mail (again in a closed system) or telephone calls

(in addition to e-mail). To make it very clear to the client that there is a person behind the support, it might be advantageous to present the staff behind the treatment program, including names and pictures (Figure 1).

The question is, how much or little therapist contact is needed? Our experience from the Swedish studies is that about 100 min per patient can be enough for a 10-week program, which, in effect, means that at least 10 min per week is spent by the therapist to comment on homework and provide feedback on other issues the patient might bring up in the online conversation. There may, however, be other possibilities. We have indications that a clear deadline can foster compliance and potentially decrease the need for continuous therapist feedback. However, this observation might not yield all conditions. Possibly, there is a continuum ranging from less demanding conditions where therapist feedback can be automated to more therapist demanding problems when motivation and feedback from a therapist are more important. In any case, we believe that compliance will increase if the client knows that progress is expected and that this will be covered in a posttreatment interview. These questions should be addressed more directly in future controlled studies.

Future research

There are many unresolved questions regarding Internet therapy. Although we believe we can say that it can work, we are less confident when it comes to explaining how and for whom it works. Attempts to find predictors of treatment outcome have so far been modestly successful, and to our knowledge there are no studies on mediators and moderators of outcome following Internet therapy. Future research should target the particulars of Internet therapy and not only focus on traditional process factors such as the working alliance. Furthermore, more research should investigate who benefits from Internet therapy and who should receive more traditional types of therapy. Overall, dissemination of CBT can be seen as one of the long-standing questions that Internet therapy can help to address.

There is an emerging literature on combined treatment formats (e.g. combining an Internet treatment program with live group sessions; Andersson et al., 2006). We believe combined treatments will be more common in the future. However, combining treatment formats makes it difficult to draw clear conclusions regarding effective ingredients and can easily be misinterpreted. For example, adherents of face-to-face therapies could dismiss the role of the Internet therapy, and proponents of Internet therapy may downplay the importance of live contact (e.g. the role of supportive telephone calls). Therefore, future research should clearly describe, potentially in separate studies, the kind of support given, the format of support (e.g. telephone, e-mail), whether the support is manualised, the level of education and experience of the support persons, whether the support is "on demand" or scheduled, and finally the full duration of the support in minutes. This could help clarify the scattered literature. For example, two treatments that combine live sessions with Internet material might differ dramatically depending on the format in which the main treatment is presented. In Andersson et al.'s (2006) report on social phobia, the two supplemental live-exposure group sessions probably made a marginal difference, because later studies without any live sessions replicated the first promising findings. Although the literature on the opposite emphasis is small, with main treatment being presented

in session and support and homework being given online, we would welcome more applications of that kind. This might be particularly suitable for adolescents and young adults.

Another development of Internet therapy concerns tailoring, as we mentioned in the previous section. The clinician might serve an important role as "prescriber" of the treatment program. For example, following an assessment session, Internet therapy could be designed to cover rationale, social anxiety, insomnia, drug abuse, and finally relapse prevention. Clients with insufficient motivation might benefit from online motivational interviewing. However, we do not yet know how important the clinician is in this particular role, and it could be that clients could handle the decision process on their own. If a careful screening and diagnosis have been completed and feedback has been provided, the choice of treatment modules could potentially be selected by the client once a proper description of treatment modules to choose from has been given (e.g. "This module covers the concept of safety behaviours, which is defined as...").

Although Internet therapy can be perceived as being far-removed from regular CBT, this new format could help us address long-standing research questions in CBT. For example, dismantling studies could be done online, because it is most likely easier to control the contents of an Internet treatment program than to control therapists in a face-to-face trial. Experiences from research on Internet therapy could also inform other therapy researchers. For example, one issue we would like to see investigated in standard therapy research is the "deadline effect," because it could be important in face-to-face therapies. By this, we mean the importance of giving a specific date when the treatment is supposed to end and when the outcome will be checked. This is similar to tests regularly used in educational settings. Many clinicians might object that this is precisely what they already do, but to our knowledge it has not been systematically investigated.

We conclude by stating that Internet therapy is a field in which rapid progress has been and continues to be made. We look forward to more research in this field, which will, we hope, better clarify "what makes Internet therapy work."

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