



A content analysis of client e-mails in guided internet-based cognitive behavior therapy for depression



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ABSTRACT

The relationship between what a client writes when communicating with an online therapist and treatment outcome in internet-based cognitive behavior therapy (ICBT) is largely unknown. The aim of this study was to address if written correspondence from the client to the therapist correlates with outcome and treatment completion. A total of 29 participants with mild to moderate depression were included from an ongoing randomized controlled trial targeting depression. Content analysis involving ten categories was performed on all emails and module responses sent by the participants to their internet therapist. A total of 3756 meaning units were identified and coded. Significant positive correlations were found between change in depression and statements in the two categories “observing positive consequences” ($r = .49$) and “alliance” ($r = .42$). Treatment module completion correlated with seven categories. The result suggests that text dealing with alliance and observing positive consequences can be used as indicators of how the treatment is progressing. This study suggests that written correspondence from an online client can be divided into ten categories and the frequency of those can be used by internet therapists to individualize treatment and perhaps make ICBT more effective.

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1. Introduction

Internet-based cognitive behavior therapy (ICBT) has been the topic for a large number of controlled trials, and a recent systematic review and meta-analysis of internet-based vs. face-to-face cognitive behavior therapy for psychiatric and somatic disorders concluded that the overall results indicated equivalence (Hedman et al., 2012). Given the emerging evidence it is likely that ICBT will be a part of regular services in the future (Carlbring and Andersson, 2006), either as a complement or as an alternative for suitable patients. Moreover, new findings indicate that side-effects of ICBT are rare (Boettcher et al., 2014), even if most research and implementations have been on mild to moderate conditions (Andersson, in press). However, in contrast to the knowledge about the effects of ICBT much less is known regarding mechanisms of change (Andersson et al., 2009). For example, the relationship between online client behaviors, such as what a client writes when communicating with an online therapist, and change in symptoms after treatment is something that has been sparsely investigated in ICBT research (Sanchez-Ortiz et al., 2011), and there is very little written about client behaviors, even if there are a few studies on therapist behaviors in the

form of analyses of therapist e-mail correspondence with their clients (Paxling et al., 2013).

There are two major forms of internet-based self-help interventions; self-guided (Titov et al., 2014) and clinician-guided (Andersson et al., 2008). In the latter an online therapist should preferably be able to continuously assess a client's behavior with regard to the therapeutic process and find methods of optimally adapting the treatment and the text-based responses. This is of importance as research indicates that therapist support tends to lead to better outcomes and fewer dropout from treatment (Andersson et al., 2013a).

One way of acquiring a closer familiarity with the role the client plays in the therapeutic process on the internet is to examine the encrypted e-mails clients send to their therapists in guided treatments (Andersson et al., 2013b). Indeed, the therapeutic process has been shown to manifest itself in both clients' speech in the context of face-to-face treatment (Crowe et al., 2012) and in text in internet therapy when therapist and client correspondence is analyzed (Van der Zanden et al., 2014; Dirkse et al., 2015). In a study on therapist behavior in ICBT for GAD, Paxling and coworkers (2013) analyzed close to 500 e-mails from three online therapists providing support to patients with generalized anxiety disorder. Through content analysis of the written correspondence, eight therapist behaviors were derived: deadline flexibility, task reinforcement, alliance bolstering, task prompting, psychoeducation, self-disclosure, self-efficacy shaping, and empathetic

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utterances. The results showed that task reinforcement, task prompting, self-efficacy shaping and empathetic utterances were correlated with module completion, while deadline flexibility was negatively associated with outcome. In addition, task reinforcement positively correlated with changes on the main outcome measure. Hence, while internet interventions generally have been found to be an effective way to disseminate psychological treatment, little is known about what the therapists actually do when he or she provides support. However, emerging results suggest that therapist behaviors have an impact on change in symptoms and module completion. Taking the client perspective, Van der Zanden and coworkers (2014) examined chat session transcripts of 67 course completers in an online intervention for young adults with depressive symptoms. They wanted to investigate whether word use changes predicted treatment outcome and adherence. Indeed, depression improvement was predicted by a patient increasing the use of discrepancy words (e.g. should) during treatment. In addition, adherence was predicted by mainly using more words at application.

Finally, alongside a naturalistic study Dirkse et al. (2015) examined messages sent to therapists during the course of an internet-based treatment for generalized anxiety disorder. Using linguistic analysis it was found that patients' use of negative emotion, anxiety, causation, and insight words was reduced over the course of treatment, while past tense words increased. In addition, negative emotional words significantly covaried with symptoms over the course of treatment.

While more expensive in the short term (Titov et al., 2009) giving the patients in internet-based therapy some form of support has been found to be an important factor in achieving a change in symptoms (Spek et al., 2007). However, it is not only the mere existence or absence of therapist support that impacts treatment outcome, but rather the frequency, intensity, duration and the quality of support (Palmqvist et al., 2007). Perhaps one of the most important aspects of support is the potential of forming a bond between the patient and the therapist. This can be assessed by the Working Alliance Inventory (WAI; Horvath and Greenberg, 1989). For example, Berger et al. (2014) have shown that therapeutic alliance can be established through the Internet. However, the results are inconclusive. For example, Bergman Nordgren et al. (2013) found that WAI measured at week 3 into the internet-based treatment correlated significantly ($r = -.47$) with the residual gain scores on the primary outcome measure. The same was found by Wagner and coworkers in posttraumatic stress symptoms (Wagner et al., 2012). In contrast, Andersson et al. (2012) only found small and not statistically significant correlations between the WAI and residualized change scores in three samples (depression, GAD and social anxiety disorder). This contradicts the findings of research on alliance in face-to-face treatments, in which alliance has been found to account for a small but robust effect on outcome (Horvath et al., 2011). Perhaps WAI is a suboptimal measure since new ways of studying the therapeutic relationship on the internet have been proposed (Knaevelsrud and Maercker, 2007; Richards and Richardson, 2012). One possibility is focusing on alliance ruptures (Hunter et al., 2014), which might be even more likely to occur in internet treatments since there is less room to quickly be responsive to a client's emotional needs. Not taking the emotional needs into consideration has been found to perpetuate ruptures (Cash et al., 2013).

An alliance rupture is an event that takes place between a therapist and client in the form of experienced tension or a rupture in the relationship (Ngai et al., in press). One way of defining alliance rupture is based on the categories of "avoidance" and "confrontational" alliance ruptures. In the avoidance form, the client tends to adopt an attitude of withdrawal from the therapy, and the alliance rupture is expressed indirectly or in a way that is not visible to the therapist. In a confrontational rupture, the patient expressly manifests negative feelings directed to the treatment or the therapist (Safran and Muran, 2000). The existence of unresolved alliance ruptures has been shown to adversely affect expected or actual treatment outcome in face-to-face treatment (Westra et al., 2011; McLaughlin et al., 2014, 2014). However, if alliance

ruptures are present in ICBT and if they influence outcome is still an open question. Hence, one of the aims of this study is to examine the evidence of alliance and alliance ruptures in written correspondence and the relationship to improvements in depression. This is done by examining the patients' written communication and the association with treatment outcome and the number of treatment modules completed, using content analysis.

2. Method

2.1. Participants

The participants in this study came from the first inclusion wave of a randomized controlled trial that is currently still enrolling participants. As described in the study protocol (Carlbring et al., 2013) each participant was included by means of a screening process consisting of internet-based questionnaires containing self-assessment of depression and anxiety, as well as a telephone interview. In order to be included, the participant had to meet the criteria for current major depressive episode based on DSM-IV-TR (American Psychiatric Association, 2000) with or without dysthymia. Participants were randomized to a control group or treatment mainly focused on either behavioral activation or physical exercise. Exclusion was ongoing psychological treatment, somatic problems known to cause depression, ongoing treatment with certain medication known to bring about depression, sub-clinical symptoms of depression, main problem other than depression (e.g., bipolar disorder, anxiety disorders, substance use disorders or hypomania) and/or a high risk of suicide. The intervention was administered and monitored via an encrypted online interface. Within this system the participant was introduced to a variety of behavior change strategies stemming from behavioral activation, a form of Cognitive Behavioral Therapy (CBT). These strategies include mapping of current behavior, finding reinforcing activities and creating a difficulty-ranked hierarchy of these activities, activity scheduling and structuring, self-monitoring of mood and activity, and so on. Each participant received approximately 15 min of therapist support per week in the form of text messages. The intervention ran for 12 weeks, divided into 8 standard weekly modules and four additional ones if desired. The study was carried out according to the guidelines for executing and reporting internet intervention research (Proudfoot et al., 2011). In addition, the study was approved by the Ethical Review Board and the treatments were conducted in compliance with the Swedish Personal Data Act (SFS: 1998:204), and the participants signed a written consent form allowing their personal data to be processed in a database, before they began treatment. Every name of a client and/or therapist was removed before the data was stored outside of the treatment platform, and was identified through the individual code they were assigned within the framework of the project.

The first 29 participants that were randomized to the treatment arm with a focus on behavioral activation were included in the present study provided that they completed more than one treatment module and also responded to the post-assessment questionnaires. In total 8 of 29 participants finished all the modules within the intended 12-week treatment period (mean number was 5.45 modules of the eight). Demographic data for the participants in this study are presented in Table 1.

2.2. Treatment

As described in the study protocol (Carlbring et al., 2013; trial registration: NCT01619930) the treatment was a type of internet therapy known as guided self-help, and consisted of a set of self-help materials with a strong focus on behavioral activation that were administered to the participant on a weekly basis during the course of twelve weeks. The treatment consisted of eight treatment modules with text and exercises, as well as the opportunity to do additional exercises if all the modules had been completed by the stipulated deadline. All modules

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