Therapist behaviours in internet-based cognitive behaviour therapy (ICBT) for depressive symptoms

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ABSTRACT

Internet-based cognitive behaviour therapy (ICBT) is efficacious for treating depression, with therapist guidance identified as important for favourable outcomes. We have limited knowledge, however, about the fundamental components of therapist guidance in ICBT. The purpose of this study was to systematically examine therapist messages sent to patients during the course of ICBT for depressive symptoms in order to identify common "therapist behaviours" and the extent to which these behaviours correlate with completion of modules and improvements in symptoms at post-treatment, one- and two-year follow-up. A total of 664 e-mails from 5 therapists to 42 patients were analysed using qualitative content analysis. The most frequent behaviour was *encouraging* that accounted for 31.5% of the total number of coded behaviours. This was followed by *affirming* (25.1%), *guiding* (22.2%) and *urging* (9.8%). Less frequently the therapists *clarified the internet treatment framework*, *informed about module content*, *emphasised the importance of patient responsibility*, *confronted* the patient and made *self-disclosures*. Six of the nine identified therapist behaviours correlated with module completion. Three behaviours correlated with symptom improvement. *Affirming* correlated significantly ($r = .42$, $p = .005$) with improvement in depressive symptoms at post-treatment and after two years ($r = .39$, $p = .014$). *Encouraging* was associated with outcome directly after treatment ($r = .52$, $p = .001$). *Self-disclosure* was correlated with improvement in depressive symptoms at post-treatment ($r = .44$, $p = .003$). The study contributes to a better understanding of therapist behaviours in ICBT for depressive symptoms. Future directions for research are discussed.

1. Introduction

A growing body of research has demonstrated that many psychological disorders can be treated effectively via the internet (Andersson et al., 2013a). Most often the internet interventions are based on cognitive behaviour therapy (CBT) and there is now substantial evidence for the efficacy of internet-based cognitive behaviour therapy (ICBT) for depression (Andersson et al., 2013b) and several anxiety disorders (Hedman et al., 2012). Although it is apparent that ICBT works, it is not well understood what accounts for treatment effectiveness (Andersson et al., 2009). There are several meta-analyses, however,

showing that ICBT with therapist guidance results in larger symptom improvement compared to self-guided ICBT (Richards and Richardson, 2012, Baumeister et al., 2014). ICBT for depression, for example, has been found to be twice as effective when supported by a therapist compared to when it is completely self-guided (Andersson and Cuijpers, 2009). Johansson and Andersson (2012) found a strong association between the amount of support offered in ICBT and outcome. Titov (2011), however, found no significant differences in effect between low-intensity and high intensity support. Nevertheless, he found that effect sizes were larger for supported compared to self-guided interventions. Consistent with this quantitative research, in a qualitative study many participants expressed appreciation for therapist guidance and were surprised by the high quality of the relationship that developed with the therapist during online communication in ICBT (Beattie et al., 2009). Kelders et al. (2015) tested automated clinical feedback compared to human clinical feedback in ICBT for depression, and found

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that although results were similar at three-month-follow up, the group with human support showed a faster decline in symptoms.

Although clinical guidance appears important in ICBT, the fundamental components of this guidance are not transparent. In most studies demonstrating the efficacy of ICBT, for instance, the nature of the support/guidance offered by the therapist has not been consistently or clearly described. Moreover, there is very limited research examining which therapist behaviours are associated with a favourable outcome in ICBT.

In contrast to ICBT, there is considerably more research on therapist behaviours in face-to-face therapy. Multiple therapist behaviours have been identified as frequently occurring in face-to-face therapy, including positive therapist behaviours such as showing empathy, confronting the patient, making interpretations, self-disclosure, teaching, supporting, showing acceptance, affirming, validating and giving praise (Barber et al., 2013, Watson et al., 2012, Keijsers et al., 2000, Watzke et al., 2008, Orlinsky et al., 1994), but also negative behaviours, such as blaming the patient, criticizing and ignoring (Henry et al., 1986, Henry et al., 1990). In terms of improvement in symptoms, a number of therapist behaviours have been associated with favourable outcomes, such as showing empathy (Bohart et al., 2002), giving (mostly positive) feedback, offering validating or normalizing self-disclosures and repairing alliance ruptures (Norcross, 2010). In other studies and reviews, other behaviours have been associated with a favourable outcome (sometimes with somewhat overlapping categories) such as affirming, showing understanding (Henry et al., 1986, Henry et al., 1990) and making interpretations (Orlinsky et al., 1994). Other behaviours occur more often when the outcome is poor, such as blaming and belittling and giving advice (Henry et al., 1986, Henry et al., 1990).

In addition to research on the therapists' behaviour there has also been efforts to study therapist characteristics (Lambert and Barley, 2002), and in a large study by Wampold and Brown (2005) about 5% of the outcome variance in face-to-face therapy could be attributed to therapist factors. When it comes to ICBT, however, no therapist factors have yet been found to influence the reduction of depressive symptoms (Almlov et al., 2009) or anxiety (Almlov et al., 2011). Nevertheless, even if it is not that important who the therapist is in ICBT, it still might be important what (s)he does.

Therapist behaviours are likely to overlap to some extent with face-to-face therapy. However, some differences are likely given that the therapist role is different in ICBT compared to face-to-face therapy (Andersson and Titov, 2014), with the most obvious difference being that the therapist does less "teaching", as this is embedded in the intervention. Specifically, the patient has the main responsibility for acquiring theoretical knowledge, often by reading, watching or listening to self-help material administered over the internet typically in the form of weekly modules. The nature of ICBT is described as shifting the therapist role towards a more supportive one, making prompts, giving individualised feedback on homework and answering questions (Andersson et al., 2008a, Andersson, 2014). Another notable difference is that the therapist and patient do not meet each other face-to-face and most communication involves written secure messages with no actual facial expressions or voice intonations accompanying the words (although sometimes these may be implied, for example, through use of symbols, capitals or bolding). Furthermore, the therapist is typically available on short notice in ICBT, and contact can be initiated by patients from their everyday context, in contrast, in face-to-face CBT the therapist is physically present for a short period of time once a week in her/his office which is obviously not the everyday context of the patients. Despite these differences, because patients tend to report high ratings of therapeutic alliance in ICBT trials (Andersson et al., 2012b), it is still reasonable to assume that there are therapist behaviours that are associated with outcome in ICBT.

To our knowledge, there are at least two published studies on therapist behaviours in ICBT. In a descriptive study of ICBT for bulimia nervosa, Sanchez-Ortiz et al. (2011) analysed the content of e-mails (N = 712) sent by therapists to patients (n = 71). They reported that 95.4% of the e-mails had at least one supportive comment, 14.7% contained at least one CBT comment, while 13.6% had at least one technical comment. They concluded that the communication from the therapist to the patient in ICBT is mainly supportive in content, with only a small amount of time required by therapists to provide email support. In a second study of ICBT for generalized anxiety disorder, Paxling et al. (2013) conducted a more detailed examination of therapist behaviours and also tested if the identified therapist behaviours were correlated with module completion or symptom improvement. They identified eight categories of therapist behaviours in 490 e-mails sent from 3 therapists to 44 patients. Therapist behaviours included task prompting, task reinforcement, alliance bolstering, deadline flexibility, psychoeducation, empathetic utterances, self-disclosure and self-efficacy shaping. While task reinforcement, task prompting, self-efficacy shaping and empathetic utterances were significantly correlated (positive correlation) with module completion, task reinforcement (positive correlation) and deadline flexibility (negative correlation) were correlated with outcome.

The aim of the current study was to expand on the existing literature and investigate written communication from therapists to patients in ICBT for depressive symptoms, and to test which behaviours, if any, were associated with module completion and symptom improvement.

2. Material and methods

2.1. Design

All e-mail messages sent from the e-therapists to the participants in the ICBT treatment group (n = 42) of a previously published randomised controlled trial (RCT) (Holländare et al., 2011) were analysed in the current study. The RCT sample consisted of 84 participants with partially remitted depression who were randomly assigned to either ICBT for depressive symptoms (n = 42) or to a control group (n = 42). In the ICBT group, therapist guidance was given through asynchronous e-mail communication, using a secure platform on the internet. In the present study, we began by using qualitative content analysis to identify categories of the therapists' behaviours. Next, we used a quantitative approach to examine correlations between the frequency of these behaviours and the outcome variables.

2.2. Participants and procedure

The sample comprised 42 participants (see Table 1) with partially remitted major depression, defined as a score of no less than 7 and no higher than 19 on the Montgomery-Åsberg Depression Rating Scale-Self rated (Svanborg and Asberg, 1994) at baseline. There were 36 women and 6 men; M_{age} = 44.8 years, SD = 13.9. The data consisted of 644 e-mail messages (comprising 100,380 words in total) sent from five therapists (25 to 35 years old; three females; two males) to these 42 patients during 10 weeks of treatment. An average message from a therapist comprised 155.86 words. The mean number of e-mail messages sent from the therapists to patients was 15.3 (SD = 6.3; range = 3 to 33). Three of the therapists were clinical psychologists and two were students at the Masters level at the end of their clinical training. All therapists were supervised by an experienced CBT-

Table 1
Patients' characteristics at baseline (n = 42).

Age, mean (SD; range)	44.8 (13.9; 22–77)
Female gender, no. (%)	36 (85.7)
Baseline antidepressant medication, no. (%)	18 (42.8)
Previous psychotherapy, no. (%)	28 (66.7)
Previous episodes of major depressive disorder, median	3
Montgomery Åsberg Depression Rating Scale—self rated, mean (SD)	15.0 (7.9)

therapist at a total of three group supervision sessions during the intervention period (Holländare et al., 2011). The study was approved by the Regional Ethics Committee in Uppsala (No. 2007/335).

2.3. Measurement

Outcome variables in the current study consisted of depressive symptoms at post-treatment and at one- and two-year follow-up, remission rate, module completion and relapse rate. The level of depressive symptoms was measured with the MADRS-S (Svanborg and Asberg, 1994) which is a self-rated questionnaire consisting of nine items that correspond to core symptoms of depression. Each item is rated on a seven-point scale (ranging from 0 to 6) with four defined scale steps and three intermediate steps. The total score ranges from 0 to 54 and a higher score indicates higher depressive symptoms. The instrument has good reliability and validity. Cronbach's alpha in earlier studies has ranged from .82 to .90 (Svanborg and Asberg, 2001), and MADRS-S has been validated for use online (Hollandare et al., 2010). Remission was defined as scoring six or less on the MADRS-S (Snaith et al., 1986). Adherence was defined as the number of completed modules, and relapse was defined as fulfilling the DSM-IV (American Psychiatric Association, 2000) criteria for MDD according to SCID-I (First et al., 1998) at any time after the study started. A total of five patients relapsed during two years in the ICBT-group.

2.4. Treatment

The written treatment material consisted of nine basic obligatory modules and seven optional advanced modules, adapted for use via the internet (Holländare et al., 2011). The modules were based on established CBT-principles for major depressive disorder such as behavioural activation, cognitive restructuring and preventive strategies and skills (e.g., mindfulness exercises). The modules consisted of psychoeducational information, homework exercises, and ended with a few questions about the outcome of completed homework. All participants had a designated e-therapist. The therapist guidance was personalised; therapists were instructed to focus on giving constructive feedback on homework and to prompt patients who became inactive. On the whole, instructions to the therapists were few and they were encouraged to let the needs of each patient guide their clinical work. When a satisfactory description of the homework in one module was sent to the therapist together with correct answers to a few key questions about the target module, the next module was made accessible. E-mails from patients were answered within one working day and therapists reported spending an average of 10 min per message, with approximately 2.5 h spent per patient throughout treatment.

2.5. Analyses

Two of the authors (FG & MB) conducted the qualitative analyses by independently reading the e-mails from the therapists and assessing the written behaviour. The aim was to identify functional categories defined by the perception of what the therapist wanted to achieve with a certain phrase, sentence or paragraph. When coding, FG and MB were blind to the identity of the therapist, identity, gender and age of patients as well as the outcome of treatment. All messages were anonymised by the principal investigator (FH) before the coding began. We used a conventional qualitative content analysis (Hsieh and Shannon, 2005). This method is commonly used to describe a phenomenon, which has not been studied before, or when current research and knowledge is limited. All therapist messages sent to eight patients during his or her treatment were randomly drawn, and categorised by both of the coders separately. Therapist behaviours were then labelled in a process of negotiated consensus, and a preliminary categorisation guide was developed. In the next step, therapist messages sent to eight new patients were randomly drawn and categorised by the two coders in order

to examine the inter-rater reliability. Cohen's Kappa was $K = .56$ (96% agreement). After establishing inter-rater reliability the remaining e-mail-conversations were divided between the coders and analysed according to the categorisation guide. During this process, new categories emerged and old ones were changed in a process of negotiated consensus in order to fit the data. A sentence or a paragraph could be coded as containing behaviours from one or more categories. Behaviours in the same category that occurred directly after each other in the text, and were aimed at the same patient behaviour were counted as one behaviour in that category. If, however, the behaviours were aimed at different parts of the patients' message (different patient behaviours) they were counted as two or more behaviours in that category.

All quantitative analyses were conducted with IBM SPSS Statistics 22 (IBM, New York). Missing data (MADRS-S during follow up) were imputed by the Multiple Imputation procedure in SPSS making 5 imputations. This creates 5 different datasets with imputed values, and the following analyses use all 5 sets, resulting in a single pooled result. Variable-oriented analyses consisted of Spearman's rho (pooled following imputation), two-tailed, and were used to analyse associations between the frequency of therapist behaviours and outcome and adherence. Spearman's correlation was chosen to avoid violating the assumption of normality. The frequency of therapist behaviours was calculated by summing the total number of times the behaviour occurred in all the messages sent from the therapist to the participant. Further, when we analysed correlations between therapist behaviours and improvement in depressive symptoms at post-treatment, at the one-year, and two-year follow-up we used residual change scores. We first calculated residual change scores with the formula $Z_2 - (Z_1 * R_{12})$, and then reversed the score so that higher scores would indicate greater improvement. Residual change scores handle measurement error of repeated administration of a self-report measure and the initial differences between individuals (Steketee and Chambless, 1992). Mann–Whitney U-tests were used to test if the frequency of any behaviour was different between groups based on the dichotomous outcome variables relapse and remission.

3. Results

A total of 3530 therapist behaviours were categorised into 9 main categories and 7 subcategories. *Encouraging* was the most frequent behaviour (31.5% of all behaviours) followed by *affirming* and *guiding*. All main categories and subcategories are listed in Table 2.

3.1. Adherence

The total number of treatment modules completed by the participant was highly correlated with the frequency (during the full treatment) of the therapist behaviours *affirming* ($r = .74$, $p < .001$), *encouraging* ($r = .79$, $p < .001$) *and guiding* ($r = .67$, $p < .001$). Somewhat lower correlations were found between the number of completed modules and the frequency of therapist *self-disclosure* ($r = .39$, $p = .012$), *clarifying the framework* ($r = .37$, $p = .016$) and *emphasizing patient responsibility* ($r = .33$, $p = .033$). There was no significant correlation between the number of completed modules and the frequency of the therapist *urging*, *confronting* or *informing about modules* (see Table 3). When we analysed the frequency of therapist behaviours during the first two weeks of treatment with the adherence we found significant correlations between the number of completed modules and the frequency of *affirming* ($r = .38$, $p = .011$), *clarifying the framework* ($r = .38$, $p = .048$), *encouraging* ($r = .38$, $p < .001$) and *guiding* ($r = .38$, $p = .018$) (see Table 4).

3.2. Depressive symptoms

The therapist behaviour *affirming* was positively correlated ($r = .42$, $p = .005$) with improvement in depressive symptoms (MADRS-S)

Table 2
Therapist behaviours (percentage), definitions and examples.

Therapist behaviour	%	Definition	Example
Emphasise patient responsibility	0.7	Expressing that the patient is responsible for (among other things) his/her own decisions.	You yourself have to determine what is best. You must be the judge of that.
Affirming	25.1	Paying attention to, acknowledging and expressing an interest in, the patients' thoughts, emotions and actions and to deem them valid.	
Validating and interpreting	14.3	Affirming by interpreting and validating what the patient wrote.	You must be having a hard time. You are right about…
Normalizing	3.7	Affirming by writing that the patients' behaviour is frequently occurring in the population.	We often isolate ourselves when we feel bad. We all have our ups and downs.
Summarizing	7.0	Affirming by summarizing and repeating what the patient wrote.	So, you listen to audio-books when you do your chores. You write that …
Clarifying the framework	5.9	Clarifying, emphasizing or reminding the patient about the internet treatment framework, and giving practical information about the project.	The treatment ends in one week. You and I will never meet.
Self-disclosure	0.9	Mentioning the therapists own experience and using personal examples from one's own life.	I also get bored by physical exercise. I use that exercise myself when…
Informing about modules	3.4	Informing about, or making reference to, upcoming modules and module content.	Module 6 will cover… One module will be about…
Confronting	0.4	Expressing another opinion or disagreeing with the patient.	As a first exercise, that seems too difficult. Tell me a bit more about that!
Urging	9.8	Urging the patient to do something	Think about this and get back to me with your comments! Please fill out the weekly rating. Let me know if you have any questions.
Encouraging	31.5	Therapist behaviours aimed at encouraging some type of patient behaviour.	
Praising past behaviour	27.0	Praising some behaviour the patient has done.	Good of you to notice your own feelings in that situation! Thank you for sending a message!
Inciting future behaviour	4.4	Encouraging expressions about something the patient is planning to do.	I'm glad to hear that you are going to a movie! I hope to hear from you again soon!
Guiding	22.2	Giving advice, informing or making suggestions.	
Theoretical guiding	12.3	Giving guiding information about psychological processes.	Behaviours are easier to change than emotions.
Giving suggestions	9.8	Giving suggestions about alternative behaviours. Giving advice about how to do something.	I suggest that you start with a task that is rather simple. Test holding a pencil while resting in the afternoon.

Note. Main-categories in bold, sub-categories in italics. The percentages for all categories give the proportion of that category within the overall sum of behaviours.

directly after treatment, and after two years ($r = .39$, $p = .014$). The therapist behaviour *encouraging* was positively correlated ($r = .52$, $p = .001$) with improvement in depressive symptoms (MADRS-S) directly after treatment, and a trend was observed after two years ($r = .31$, $p = .056$). There was a significant correlation between the frequency of *self-disclosures* made by the therapist and outcome on depressive symptoms at post-treatment ($r = .44$, $p = .003$), however this correlation was substantially lowered, and no longer significant, at one-year and two-year follow-up. The therapist behaviours *emphasizing the patient's responsibility*, *clarifying the framework*, *informing about modules*, *confronting*, and *urging* were not significantly correlated with change in depressive symptoms when measured with the MADRS-S at post-treatment or at any of the two points of follow up measurement. All correlations are listed in Table 3. We also conducted analyses in

which we correlated the frequency of therapist behaviours during the first two weeks of treatment with the improvement in depressive symptoms (see Table 4), and found that *encouraging* was significantly correlated with outcome at post-treatment ($r = .38$, $p = .014$), and that *clarifying the framework* was correlated with outcome at the two year follow up ($r = .34$, $p = .025$).

In a secondary analysis the frequency of therapist behaviour per completed module was correlated with outcome. Results are shown in Table 5. *Self-disclosure* per completed module was positively correlated with improvement at post treatment ($r = .38$, $p = .014$). The frequency of *clarifying the framework* per completed module was negatively correlated with improvement at post treatment ($r = -.32$, $p = .038$), and *urging* was negatively correlated with improvement after two years ($r = -.34$, $p = .034$). The frequency of *informing about modules*

Table 3
Correlations (Spearman's rho) between frequency of therapist behaviours during the full treatment period and residual change in depressive symptoms (MADRS-S) at post-treatment, 1 year follow-up and 2 year follow-up, and number of completed modules ($n = 42$).

Therapist behaviour	Change score MADRS-S			Completed modules
	Pre–post	Pre–1 year	Pre–2 year	
Emphasise the patient's responsibility	−.12	.02	.12	.33 *
Affirming	.42**	.26	.39 *	.74 **
Clarifying the framework	.04	−.02	.06	.37 *
Self-disclosure	.44**	.07	.12	.39 *
Informing about modules	−.16	−.14	.13	.16
Confronting	−.16	−.02	.06	.21
Urging	.16	.02	−.03	.26
Encouraging	.52**	.17	.31	.79 **
Guiding	.27	.12	.29	.67 **

Note: * = $p < .05$, ** = $p < .01$; positive correlations indicate greater symptom improvement and module completion.

Table 4
Correlations (Spearman's rho) between frequency of therapist behaviours during the first two weeks of treatment and residual change in depressive symptoms (MADRS-S) at post-treatment, 1 year follow-up and 2 year follow-up, and number of completed modules ($n = 42$).

Therapist behaviour	Change score MADRS-S			Completed modules
	Pre–post	Pre–1 year	Pre–2 year	
Emphasise the patient's responsibility	−.21	.04	.04	.10
Affirming	.15	.09	.08	.38 *
Clarifying the framework	.24	.20	.34 *	.31 *
Self-disclosure	.26	.15	−.26	−.12
Informing about modules	.01	−.14	−.10	.01
Confronting	.17	.15	.13	.23
Urging	.23	.13	−.03	.29
Encouraging	.38*	.10	.12	.58 **
Guiding	.03	−.01	−.05	.36 *

Note: * = $p < .05$, ** = $p < .01$; positive correlations indicate greater symptom improvement and module completion.

Table 5
Correlations (Spearman's rho) between frequency of therapist behaviours per completed module and residual change in depressive symptoms (MADRS-S) at post-treatment, 1 year follow-up and 2 year follow-up, and number of completed modules ($n = 42$).

Therapist behaviour	Change score MADRS-S			Completed modules
	Pre–post	Pre–1 year	Pre–2 year	
Emphasise the patient's responsibility	−.23	−.02	.06	.09
Affirming	.004	−.01	.07	−.29
Clarifying the framework	−.32*	−.25	−.18	−.72
Self-disclosure	.38*	.09	.06	.29
Informing about modules	−.30	−.22	−.12	−.36 *
Confronting	−.18	−.04	.03	.16
Urging	−.24	−.30	−.34 *	−.66 **
Encouraging	.24	−.09	.03	−.29
Guiding	−.23	−.27	−.09	−.42 **

Note: * = $p < .05$, ** = $p < .01$.

($r = −.36, p = .019$), urging ($r = −.66, p < .001$) and guiding ($r = −.42, p = .005$) per completed module was negatively correlated with adherence.

3.3. Remission and relapse

Therapists made significantly more *self-disclosures* to patients who later achieved remission at post-treatment compared to those patients who did not (Mann–Whitney U = 107.5, $p = .036$). There were no significant differences in frequency of any therapist behaviours between those who suffered a relapse compared to those who did not relapse (see Table 6).

4. Discussion

The current study adds to knowledge about the components of therapist guidance provided during the course of ICBT for depressive symptoms, identifying both frequent and infrequent behaviours. The study also adds to the knowledge about which of these therapist behaviours are associated with adherence and outcome. This is the first study, to our knowledge, to investigate therapist behaviours in ICBT for depressive symptoms, and the first study to investigate if any therapist behaviours in ICBT are correlated with longer term outcomes (one- and two-year outcomes).

The therapists conducting ICBT for depressive symptoms were found to *encourage*, *affirm*, *guide* and *urge* their patients frequently. Less frequently, the therapists *clarified the framework*, *informed about modules*, *emphasised patient responsibility*, *confronted* the patient and made *self-disclosures*.

Similar to face-to-face therapy, only certain therapist behaviours were associated with adherence and outcomes. *Affirming* was associated with treatment adherence and a favourable outcome directly after treatment, and after two years, when measured as symptom reduction.

Encouraging was associated with treatment adherence and a favourable outcome directly after treatment. *Self-disclosure* was very low in frequency, but it was nevertheless significantly correlated with adherence and a favourable outcome directly after treatment. *Self-disclosure* was also used significantly more often with patients who would later reach full remission, compared to those who did not. When we re-analysed the data, correlating the frequency of therapist behaviours during the first two weeks of treatment with outcome and adherence we found that *encouraging* (at this early stage of treatment) was already associated with outcome. Interestingly, the frequency of *clarifying the framework* (during the first two weeks) was associated with a favourable outcome, which it was not when measured during the full treatment period. This indicates that certain therapist behaviours might be important during different phases of treatment. Another interesting finding is that the frequency during the first two weeks of treatment (of some therapist behaviours) correlates with adherence during the full treatment period.

In terms of past comparable research, Paxling et al. (2013) found that task reinforcement was the most frequent behaviour in ICBT for GAD, which is in line with our finding that encouragement (of e.g., past behaviour) was the most frequent behaviour for therapists in ICBT for depressive symptoms. Affirmation was highly frequent in the current study, which is in line with the finding by Sanchez-Ortiz et al. (2011) who reported that a large majority of e-mails in their study consisted of supportive statements. Similar to the study by Paxling et al. (2013), we found that more therapist behaviours correlated with adherence (module completion) than with outcome. In contrast to the study by Paxling, however, we did not observe therapists to use "deadline flexibility" in their emails.

There are similarities between our categories and previous findings in the literature on face-to-face therapy. The three behaviour categories that correlated with favourable outcome in the current study (encouraging, affirming and self-disclosure) have all been found to be associated with favourable outcomes in face-to-face therapy (Norcross, 2010).

Interestingly, we did not find critical comments from the therapists in this study such as blaming, belittling or criticizing that have previously been reported in some studies of face-to-face therapy (Henry et al., 1990). This is in line with both Paxling (2013) and Sanchez-Ortiz (2011) who did not report any such behaviours in their studies. It could be that writing emails to patients gives the therapist time to review and reflect on their therapeutic response and thus stops impulses to be critical; this could be an advantage in ICBT. Perhaps communicating asynchronous via text-messages spares the patient from seeing signs that the therapist is losing patience, becoming tired or provoked (Andersson et al., 2008b). Some of the therapists' spontaneous responses may be useful in therapy (Rozental et al., 2015), however, so not seeing the therapist can also at times be a disadvantage. Also, body language of the therapist and the patient cannot be seen and tone of voice is not present, which probably limits the information being transferred.

Table 6
Median frequency of therapist behaviours directed at patients that would (or would not) later relapse, that would (or would not) achieve remission at post-treatment, U-values.

Therapist behaviour	Relapse ($n = 5$)	No relapse ($n = 37$)	U	Remitted ($n = 21$)	Not remitted ($n = 17$)	U
Emphasise the patient's responsibility	0	0	88.5	0	1	216.5
Affirming	19	19	86.5	20	18	130
Clarifying the framework	5	5	115.5	5	5	226.5
Self-disclosure	0	0	68.5	1	0	107.5 *
Informing about modules	3	3	85	3	4	233.5
Confronting	1	0	126	0	0	228.5
Urging	7	6	103	7	7	203.5
Encouraging	27	24	74.5	37	24	115
Guiding	19	16	98	16	19	186.5

Note: * = $p < .05$.

In an attempt to investigate communication style rather than the dosage (of certain behaviours) actually received, we re-analysed the data correlating the ratio between the frequency of therapist behaviour and number of completed modules with improvement. *Self-disclosures* per module were positively associated with improvement, but no other ratio was. The number of times the therapist would *urge* and *clarify the framework* per module was associated with less improvement, and the number of times the therapist would *inform about the modules, urge* and *guide* per module was associated with lower adherence. This might be an indication that a frequent use of those behaviours per module has a negative effect on outcome, or maybe a lack of progress in treatment triggers these therapist behaviours.

In terms of limitations, first, the associations are correlational in nature, and causality cannot be inferred. Perhaps some unknown factor is causing the patient to complete homework, and the praise from the therapist is simply a result of the completed homework. In other words, perhaps the improvement in symptoms would have happened without praise. An experimental design, in which patients are randomised to different amounts of encouragement, would be needed to study this. Second, two of the three therapists in the study had no previous experience offering therapist-guidance in ICBT and it is possible that more experienced therapists communicate in a different manner, for example by writing less frequently (Andersson et al., 2012a). The sample size did not permit analysis of potential differences in therapy provided by experienced versus inexperienced therapists. Third, as with the previous studies (Paxling et al. and Sanchez-Ortiz et al.) we did not code or analyse how the patients responded to the therapist behaviours. Patient behaviour in ICBT for depression has, however, been studied in a recent article (Svartvatten et al., 2015), and studies investigating the interaction between therapist and patient behaviour would be informative. The symptoms of the participants were in partial remission and our findings might not be generalizable to patients with other levels of symptoms.

Despite these limitations there are notable strengths to this study. We captured what the therapists actually did in ICBT, rather than confirming the presence of therapist behaviours that have been found in face-to-face therapy. Specifically, we chose an inductive method when categorizing the data, rather than a theory driven one. The qualitative content analysis was conducted by two therapists with training in integrative psychotherapy, and any allegiance effect should therefore be minimal. Another strength of the study is that the treatment effect was patient-rated and the categorisation of therapist behaviours and count of its frequency was conducted by staff not involved in treatment. Hence, at no point did anyone assess his or her own clinical work.

Future research should continue to examine therapist behaviours in ICBT for depression and other diagnoses. Randomised designs are needed to study causal relationships between therapist behaviours and outcomes. Another question is whether some therapist behaviours are important in certain stages of treatment as indicated by our finding that *encouragement* and *clarifying the framework* during the first two weeks of treatment is associated with outcome. This is also suggested in the theory of supportive accountability (Mohr et al., 2011) by the claim that one should make expectations very clear early in the process of ICBT. Future studies should also investigate possible associations between therapist behaviours and negative effects of ICBT (Rozental et al., 2014).

In conclusion, this study indicates that the therapists in ICBT for depression first and foremost encourage, guide and affirm their patients when conducting the online guidance, and that *encouragement*, *self-disclosure* and *affirmation* are associated with a favourable outcome at post treatment, and that *affirmation* is associated with long term outcome.

Conflict of interest statement

The authors have no conflict of interest to report.

References

Almlov, J., Carlbring, P., Berger, T., Cuijpers, P., Andersson, G., 2009. Therapist factors in Internet-delivered cognitive behavioural therapy for major depressive disorder. Cogn. Behav. Ther. 38, 247–254.

Almlov, J., Carlbring, P., Kallqvist, K., Paxling, B., Cuijpers, P., Andersson, G., 2011. Therapist effects in guided internet-delivered CBT for anxiety disorders. Behav. Cogn. Psychother. 39, 311–322. http://dx.doi.org/10.1017/S135246581000069X Epub 2010 Dec 13.

American Psychiatric Association, 2000. Diagnostic and Statistical Manual of Mental Disorders. Text Revision Ed.,. American Psychiatric Press, Washington DC.

Andersson, G., 2014. The Internet and CBT: A Clinical Guide. CRC Press, Boca Raton.

Andersson, G., Cuijpers, P., 2009. Internet-based and other computerized psychological treatments for adult depression: a meta-analysis. Cogn. Behav. Ther. 38, 196–205.

ANDERSSON, G., TITOV, N., 2014. Advantages and limitations of Internet-based interventions for common mental disorders. World Psychiatry. 13, 4–11. http://dx.doi.org/10.1002/wps.20083.

Andersson, G., Bergstrom, J., BUHRMAN, M., Carlbring, P., Hollandare, F., Kaldo, V., Nilsson-Ihrfelt, E., Paxling, B., STROM, L., Waara, J., 2008a. Development of a new approach to guided self-help via the Internet: the Swedish experience. J. Technol. Hum. Serv. 26, 161–181.

Andersson, G., Carlbring, P., Grimlund, A., 2008b. Predicting treatment outcome in Internet versus face to face treatment of panic disorder. Comput. Hum. Behav. 24, 1790–1801.

Andersson, G., Carlbring, P., Berger, T., Almlov, J., Cuijpers, P., 2009. What makes internet therapy work? Cogn. Behav. Ther. 38, 55–60. http://dx.doi.org/10.1080/16506070902916400.

Andersson, G., Carlbring, P., Furmark, T., 2012a. Therapist experience and knowledge acquisition in internet-delivered CBT for social anxiety disorder: a randomized controlled trial. PLoS One 7, e37411. http://dx.doi.org/10.1371/journal.pone.0037411 Epub 2012 May 23.

Andersson, G., Paxling, B., Wiwe, M., Vernmark, K., Felix, C.B., Lundborg, L., Furmark, T., Cuijpers, P., Carlbring, P., 2012b. Therapeutic alliance in guided internet-delivered cognitive behavioural treatment of depression, generalized anxiety disorder and social anxiety disorder. Behav. Res. Ther. 50, 544–550. http://dx.doi.org/10.1016/j.brat.2012.05.003 Epub 2012 May 18.

Andersson, G., Carlbring, P., Ljótsson, B., Hedman, E., 2013a. Guided internet-based CBT for common mental disorders. J. Contemp. Psychother. 43, 223–233.

Andersson, G., Hesser, H., Veilord, A., Svedling, L., Andersson, F., Sleman, O., Mauritzson, L., Sarkohi, A., Claesson, E., Zetterqvist, V., Lamminen, M., Eriksson, T., Carlbring, P., 2013b. Randomised controlled non-inferiority trial with 3-year follow-up of internet-delivered versus face-to-face group cognitive behavioural therapy for depression. J. Affect. Disord. 151, 986–994. http://dx.doi.org/10.1016/j.jad.2013.08.022 Epub 2013 Aug 30.

Barber, J.P., Muran, J.C., McCarthy, K.S., Keefe, R.J., 2013. Research on dynamic therapies. In: Lambert, M.J. (Ed.), Bergin and Garfield's Handbook of Psychotherapy and Behavior Change, 6th ed. John Wiley & Sons, New-York, NY.

Baumeister, H., Reichlera, L., Munzingera, M., Lina, J., 2014. The impact of guidance on internet-based mental health interventions — a systematic review. Internet Interventions 1, 205–215.

Beattie, A., Shaw, A., Kaur, S., Kessler, D., 2009. Primary-care patients' expectations and experiences of online cognitive behavioural therapy for depression: a qualitative study. Health Expect. 12, 45–59.

Bohart, A.C., Elliot, R., Greenberg, L.S., Watson, J.C., 2002. Empathy. In: Norcross, J.C. (Ed.), Psychotherapy relationships that work. Oxford University Press, New York.

First, M.B., Gibbon, M., Spitzer, R.L., Williams, J.B.W., 1998. Structured Clinical Interview for DSM-IV Disorders (SCID-I) (Swedish Version). Pilgrim Press, Danderyd.

Hedman, E., Ljotsson, B., Lindefors, N., 2012. Cognitive behavior therapy via the Internet: a systematic review of applications, clinical efficacy and cost-effectiveness. Expert Rev Pharmacoecon Outcomes Res 12, 745–764.

Henry, W.P., Schacht, T.E., Strupp, H.H., 1986. Structural analysis of social behavior: application to a study of interpersonal process in differential psychotherapeutic outcome. J. Consult. Clin. Psychol. 54, 27–31.

Henry, W.P., Schacht, T.E., Strupp, H.H., 1990. Patient and therapist introject, interpersonal process, and differential psychotherapy outcome. J. Consult. Clin. Psychol. 58, 768–774.

Hollandare, F., Andersson, G., Engstrom, I., 2010. A comparison of psychometric properties between internet and paper versions of two depression instruments (BDI-II and MADRS-S) administered to clinic patients. Journal of Medical Internet Research 12, e49.

Holländare, F., Johnsson, S., Randestad, M., Tillfors, M., Carlbring, P., Andersson, G., Engström, I., 2011. Randomized trial of Internet-based relapse prevention for partially remitted depression. Acta Psychiatr. Scand. 124, 285–294.

Hsieh, H.F., Shannon, S.E., 2005. Three approaches to qualitative content analysis. Qual. Health Res. 15, 1277–1288.

Johansson, R., Andersson, G., 2012. Internet-based psychological treatments for depression. Expert. Rev. Neurother. 12, 861–870.

Keijsers, G.P., Schaap, C.P., Hoogduin, C.A., 2000. The impact of interpersonal patient and therapist behavior on outcome in cognitive-behavior therapy. A review of empirical studies. Behav. Modif. 24, 264–297.

Kelders, S.M., Bohlmeijer, E.T., Pots, W.T., Van Gemert-Pijnen, J.E., 2015. Comparing human and automated support for depression: fractional factorial randomized controlled trial. Behav. Res. Ther. 72, 72–80. http://dx.doi.org/10.1016/j.brat.2015.06.014 Epub 2015 Jul 6.

Lambert, M.J., Barley, D.E., 2002. Research summary on the therapeutic relationship and psychotherapy outcome. In: Norcross, J.C. (Ed.), Psychotherapy Relationships That Work: Therapist Contributions and Responsiveness to Patients. Oxford University Press, Oxford, England.

MOHR, D.C., CUIJPERS, P., LEHMAN, K., 2011. Supportive accountability: a model for providing human support to enhance adherence to eHealth interventions. Journal of Medical Internet Research 13, e30.

NORCROSS, J.C., 2010. The therapeutic relationship. In: DUNCAN, B.L. (Ed.), The Heart and Soul of Change: Delivering What Works in Therapy. American Psychological Association, Washington.

ORLINSKY, D.E., GRAVE, K., PARKS, B.K., 1994. Process and outcome in psychotherapy — Noch Einmal. In: BERGIN, A.E., GARFIELD, S.L. (Eds.), Handbook of Psychotherapy and Behavior Change. Wiley, New York.

Paxling, B., Lundgren, S., Norman, A., Almlov, J., Carlbring, P., Cuijpers, P., Andersson, G., 2013. Therapist behaviours in internet-delivered cognitive behaviour therapy: analyses of e-mail correspondence in the treatment of generalized anxiety disorder. Behav. Cogn. Psychother. 41, 280–289. http://dx.doi.org/10.1017/S1352465812000240 Epub 2012 May 1.

Richards, D., Richardson, T., 2012. Computer-based psychological treatments for depression: a systematic review and meta-analysis. Clin. Psychol. Rev. 32, 329–342 Epub 2012 Feb 28.

Rozental, A., Andersson, G., Boettcher, J., Ebert, D.D., Cuijpers, P., Knaevelsrud, C., Ljótsson, B., Kaldo, V., Titov, N., Carlbring, P., 2014. Consensus statement on defining and measuring negative effects of Internet interventions. Internet Interventions 1, 12–19.

Rozental, A., Boettcher, J., Andersson, G., Schmidt, b., Carlbring, p., 2015. Negative effects of internet interventions: a qualitative content analysis of patients' experiences with treatments delivered online. Cogn. Behav. Ther. 44, 223–236. http://dx.doi.org/10.1080/16506073.2015.1008033 Epub 2015 Feb 23.

Sanchez-Ortiz, V.C., Munro, C., Startup, H., Treasure, J., Schmidt, U., 2011. The role of email guidance in internet-based cognitive–behavioural self-care treatment for bulimia nervosa. Eur. Eat. Disord. Rev. 19, 342–348. http://dx.doi.org/10.1002/erv.1074 Epub 2011 Mar 10.

Snaith, R., Harrop, F., Newby, D., Teale, C., 1986. Grade scores of the Montgomery–Asberg Depression and the Clinical Anxiety Scales. Br. J. Psychiatry 148, 599–601.

Steketee, G., Chambless, D., 1992. Methodological issues in prediction of treatment outcome. Clin. Psychol. Rev. 12, 387–400.

Svanborg, P., Asberg, M., 1994. A new self-rating scale for depression and anxiety states based on the Comprehensive Psychopathological Rating Scale. Acta Psychiatr. Scand. 89, 21–28.

Svanborg, P., Asberg, M., 2001. A comparison between the Beck Depression Inventory (BDI) and the self-rating version of the Montgomery Asberg Depression Rating Scale (MADRS). J. Affect. Disord. 64, 203–216.

Svartvatten, N., Segerlund, M., Dennhag, I., Andersson, G., Carlbring, P., 2015. A content analysis of client e-mails in guided internet-based cognitive behavior therapy for depression. Internet Interventions 2, 121–127.

TITOV, N., 2011. Internet-delivered psychotherapy for depression in adults. Current Opinion in Psychiatry 24, 18–23.

WAMPOLD, B.E., BROWN, G.S., 2005. Estimating variability in outcomes attributable to therapists: a naturalistic study of outcomes in managed care. J. Consult. Clin. Psychol. 73, 914–923.

Watson, V.C., Cooper, M., McArthur, K., Mcleod, J., 2012. Helpful therapeutic processes: client activities, therapist activities and helpful effects. European Journal of Psychotherapy and Counselling 14, 77–89.

Watzke, B., Rueddel, H., Koch, U., Rudolph, M., Schulz, H., 2008. Comparison of therapeutic action, style and content in cognitive–behavioural and psychodynamic group therapy under clinically representative conditions. Clin Psychol Psychother. 15, 404–417. http://dx.doi.org/10.1002/cpp.595.