Just a click away... E-mental health for eating disorders

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Chapter 9

Opening the black box of therapist support in an Internet-based intervention for eating disorders: Can therapist behaviors predict participants' outcome and satisfaction?

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Abstract

Objective: The current study aimed to 1) explore the types of therapist behaviors that were provided as part of an Internet-based intervention for eating disorder psychopathology, and 2) investigate whether therapist behaviors are associated with participants' outcome and satisfaction.

Method: By means of a Grounded Theory approach, we qualitatively investigated all therapist (*N*=7) communication within 937 e-mails and 417 chats that were sent to 177 participants over the 8-week course of the intervention. Regression analyses were conducted in order to investigate the second aim.

Results: A codebook with 31 identified therapist behaviors was developed, by which 40,216 therapist behaviors were coded. The majority of the behaviors (*n*=19,282, 48%) were related to being supportive and showing interest and empathy, whereas 40% (*n*=16,149) of all therapist behaviors were related to assessment, interventions and counseling, and only a minority (*n*=4785, 12%) pertained formalities and explaining procedures. The type of therapist behaviors did not predict participants' outcome in terms of psychopathology, but significantly predicted participants' satisfaction with their therapist. Specifically, the more therapists behaviors related to assessment and counseling relative to behaviors concerning support and empathy, the higher participants' satisfaction.

Discussion: This study helps in opening the black box of therapeutic support within E-health interventions. Professional therapeutic behaviors related to assessment and interventions may help to enhance participants' satisfaction, but not outcome. The effects of type of therapist behaviors on outcome warrants further investigation, as this could lead to valuable insights on how to most (cost-) effectively implement therapist guidance within E-health interventions.

Introduction

Over the past decade the use of Internet has grown rapidly and has profoundly changed the way we communicate. Individuals increasingly use e-mails, instant messaging, social media, and social networking sites as communication tools (Pew Research Center, 2015b). Many individuals also search for health information on the Internet (Pew Research Center, 2015a). Alongside this development, the use and investigation of new technologies within (mental) healthcare settings has proliferated (Cunningham, Gulliver, Farrer, Bennett, & Carron-Arthur, 2014; Ventola, 2014).

Internet-based interventions have found to be effective for a range of psychological health problems (Aardoom et al., 2013; Gainsbury & Blaszczynski, 2011; Kuester, Niemeyer, & Knaevelsrud, 2016; Riper et al., 2014; Spek et al., 2007). Preliminary evidence suggests that guided Internet-based cognitive behavioral therapy (CBT) might be equally effective as face-to-face CBT (Andersson, Cuijpers, Carlbring, Riper, & Hedman, 2014; Olthuis, Watt, Bailey, Hayden, & Stewart, 2015). Despite these promising results, research into factors underlying the effectiveness warrant investigation. The intervention programs come in many different forms (e.g., variation in duration and the number and content of modules), and furthermore include different intensities of therapist contact, ranging from very limited and brief contact to intensive therapeutic involvement (Olthuis et al., 2015; Palmqvist, Carlbring, & Andersson, 2007).

Interestingly, little is known about what types of therapist guidance are offered within Internet-based interventions: what do therapists actually do? Sánchez-Ortiz et al. (2011) investigated the e-mails sent by therapists within an Internet-based treatment for eating disorders (EDs), and found that the e-mails were mainly supportive in content. More specifically, approximately 95% of all sent e-mails contained at least one supportive comment, 15% at least one CBT-based comment, and 14% at least one technical or study-related comment. Two other studies investigated therapist behaviors in an Internet-based CBT for generalized anxiety disorders (Paxling et al., 2012) and depressive symptoms (Holländare et al., 2015). Although both studies identified more categories of therapist behaviors (8 and 9 respectively), supportive behaviors such as encouragement, reinforcement, and affirming were the most frequent therapist behaviors.

The two above-mentioned studies (Holländare et al., 2015; Paxling et al., 2012) subsequently investigated whether the identified therapist behaviors were related to treatment outcome. Indeed, participants with depressive symptoms achieved better outcomes in an Internet-based CBT when therapists more often encouraged participants' behavior, affirmed participants' thoughts, emotions, and actions, and showed more self-disclosures such as mentioning own experiences and examples from one's own life

(Holländare et al., 2015). In the context of generalized anxiety disorders, better treatment outcomes were positively associated with therapist behaviors aimed at reinforcement of assignments (Paxling et al., 2012). Conversely, therapist behaviors related to deadline flexibility, being the allowance of extra time regarding deadlines for homework or treatment modules, were negatively associated with treatment outcome.(Paxling et al., 2012).

Two randomized controlled trials have experimentally investigated the type of guidance within an Internet-based CBT for generalized anxiety disorder (Robinson et al., 2010) and depression (Titov et al., 2010). The guidance was either provided by a licensed therapist, comprising active engagement in participants' goal setting, problem solving, and discussion of strategies to overcome barriers to progress, or a technician with no qualifications in counseling who was instructed to provide support and encouragement. The results of both trials demonstrated no significant differences in outcome between the therapist- and technician-guided condition (Robinson et al., 2010; Titov et al., 2010). Similarly, Alfonsson et al. (2015) experimentally investigated the effects of the frequency (weekly versus everyday) and the type of therapist support (friendly and supportive versus therapeutic with techniques derived from motivational interviewing) on the outcomes of a brief Internet-based relaxation program for individuals with symptoms of stress and worry. Neither the enhancement of the frequency, nor the type of therapist guidance, significantly affected treatment outcome (Alfonsson, Olsson, & Hursti, 2015).

To summarize, the literature provides mixed results regarding the associations between the type of therapist guidance and outcome (Holländare et al., 2015; Paxling et al., 2012). It is important to gain more insight into the type of therapist guidance that is delivered in Internet-based interventions and how this is related to outcome. It could lead to valuable insights into what kind of therapist behaviors need to be focused on in order to enhance outcomes. These insights could in turn inform decision making on how to most (cost-) effectively implement therapist guidance in Internet-based interventions. This study aimed to explore the types of therapist behaviors as provided in the therapist support sessions which were offered in addition to an Internet-based intervention for ED psychopathology. A second aim was to investigate the association between therapist behaviors and participants' outcome and satisfaction with their therapist respectively.

Method

Design

This study was conducted as part of a randomized controlled trial (Aardoom et al., 2013) comparing four conditions: 1) Internet-based intervention 'Featback', consisting of

psychoeducation and a fully automated monitoring and feedback system, 2) Featback with low-intensity (weekly) therapist support by means of e-mail, chat, or Skype, 3) Featback with high-intensity (three times a week) therapist support, and 4) a waiting list control. The automated monitoring and feedback system comprised a weekly monitoring questionnaire addressing ED psychopathology. After completion, supportive feedback messages are automatically generated according to a pre-defined algorithm and send to the participants accordingly (for more details, see Aardoom et al. (2013)). Featback was demonstrated to be superior in reducing bulimic psychopathology, symptoms of depression and anxiety, and levels of perseverative thinking in comparison to the waiting list (Aardoom et al., 2016). No added value of therapist support was found in terms of the effectiveness of Featback, although therapist support did significantly enhance participants' satisfaction with the intervention. Specifically, participants who received Featback without therapist support were significantly less satisfied (*M*=5.0, scale 1-10) than participants who received Featback with low- (*M*=7.1) or high-intensity therapist support (*M*=7.4), while no differences between the latter two were found. Overall, participants were very satisfied with their therapist (*M*=8.0, scale 1-10), with no differences between the low- and high-intensity therapist support conditions (*p*=.74).

Given the current study focus on therapist support, only conditions two and three were included in this study. Skype sessions were not recorded and therefore not included. Chat sessions had a maximum duration of 20 minutes, whereas an e-mail session contained one e-mail reply from the therapist to the participant. Therapist support was provided by seven females who were Master of Science (MSc) students in clinical psychology or individuals with a MSc degree in clinical psychology. All therapists underwent training in the delivery and methodology of online support. The chat methodology was based on a 5-phase model: 1) a warm welcome, 2) clarifying the question, 3) determining the goal of the conversation, 4) concrete elaboration of the goal of the conversation, and 5) closing the circle (Schalken et al., 2010). The e-mail methodology contained three phases: 1) extracting the question, 2) formulating an answer, and 3) checking and re-reading the message, and sending it (Schalken et al., 2010). Regular supervision to the therapists was provided both individually and in group format (for more details, see study protocol (Aardoom et al., 2013)).

Participants

The study sample included 177 participants who received Featback with low- (*n*=88) or high-intensity therapist support (n=89). Participants were primarily female (*n*=174, 98.3%) and had a mean age of 24.7 years (*SD*=8.4). The mean duration of ED problems was 7.1 years (SD=6.6). Seventy-nine participants (44.6%) reported to currently receive, or have

ever received, treatment for their ED. Eighty-five participants (48.0%) reported to have ever been formally diagnosed with an ED. The severity of participants' ED psychopathology was further reflected in their scores on the Eating Disorder Examination Questionnaire (EDE-Q) (*M*=4.2, *SD*=0.9) (Fairburn et al., 2008). This EDE-Q mean score is comparable to the overall norm for treatment-seeking patients with an ED in our specialized clinical program (Aardoom et al., 2012) and is furthermore markedly above the clinical thresholds of >2.2 (Dingemans et al., 2016).

Coding of therapist behaviors

All written therapist communication in e-mails to, or chats with, a participant were extracted from therapists' e-mail inboxes and chat histories and exported to QSR Nvivo for coding. The coding process was guided by a handbook of qualitative research methods (Mortelmans, 2007) and comprised a conventional inductive approach (Hsieh & Shannon, 2005), also commonly referred to as Grounded Theory (Glaser & Strauss, 1967). This approach allows themes and categories to emerge from the data through the researcher's careful examination. Two authors (J.A. and M.N.B) developed a codebook by starting to explore and discuss five randomly selected transcripts of different therapists. The transcripts were extensively read and reviewed, where after the two authors began to create tentative themes (i.e., therapist behaviors) that seemed to emerge from the data. Next, the number of themes was reduced by grouping the themes under categories, resulting in an initial codebook. This initial codebook included names, definitions, descriptions, examples, and inclusion and exclusion criteria for each category of therapist behaviors. Then, the two authors independently coded another randomly selected set of five transcripts. They compared and discussed their coding consecutively, reaching agreement on existing codes, adapting the codebook by refining and elaborating on existing codes, and developing new codes where considered necessary. This process was repeated until the codebook seemed to be functioning well, meaning that no new categories of therapist behaviors were identified in the data.

Saturation of the codebook was reached after eight cycles of coding and discussing five randomly selected transcripts. Then, intercoder reliability was assessed as an objective quantitative measure of the degree to which the two authors assigned the same codes on the same pieces of text, based on another 10 randomly selected transcripts. The intercoder reliability was acceptable (Cohen, 1960): the percent agreement was 98.63 and Cohen's Kappa (*k*) was 0.75. The authors compared and discussed their coding work and reached consensus, so that a golden standard was developed. This golden standard was used in assessing intercoder reliability with three MSc students. Intercoder reliability between the two authors and the students was

acceptable: 98.32% agreement (*k*=0.71), 98.43% agreement (*k*=0.73), and 98.22% agreement (*k*=0.66) respectively. Each student coded a subset of therapist transcripts that were send to 40 randomly selected participants. J.A. and M.N.B. coded the subset of transcripts that were send to the remaining 57 participants.

Outcome measures

This study included the baseline and post-intervention assessments consisting of online self-report questionnaires. The primary outcome measure was ED psychopathology, as assessed by the Short Evaluation of Eating Disorders (SEED) (Bauer et al., 2005) and the EDE-Q (Fairburn et al., 2008). The SEED is a brief self-report questionnaire tapping the main symptoms of anorexia nervosa (underweight, fear of weight gain, distortion of body perception) and bulimia nervosa (binge-eating, compensatory behaviors, over concern with body shape and weight). Total severity indexes (range 0-3) can be calculated for both dimensions. The SEED has demonstrated validity and was shown sensitive to ED symptom change (Bauer et al., 2005). Regarding the EDE-Q, a global score was calculated by summing and averaging 22 seven-point Likert items (range 0-6). The EDE-Q has demonstrated reliability and validity in assessing ED symptoms (Berg et al., 2011) and was also shown sensitive to symptom change (Sysko, Walsh, & Fairburn, 2005). Higher scores on the SEED and the EDE-Q reflect higher levels of ED psychopathology.

Secondary outcomes measures included symptoms of depression and anxiety, as assessed by the 4-item Patient Health Questionnaire (PHQ-4) (Kroenke et al., 2009), a validated and reliable ultra brief screener for anxiety and depression (Kroenke et al., 2009; Löwe et al., 2010). Levels of perseverative thinking were assessed by the Perseverative Thinking Questionnaire (PTQ) (Ehring et al., 2011), which has established reliability and validity in assessing the key characteristics of repetitive negative thinking (Ehring et al., 2011). Finally, ED-related quality of life was measured by the Eating Disorder-related Quality of Life questionnaire (ED-QOL) (Engel et al., 2006), assessing the influence of eating behaviors and body weight in the psychological, physical and cognitive, financial and work/school-related domain. The ED-QOL has demonstrated reliability and validity (Engel et al., 2006). Higher scores on the PHQ-4, PTQ, and ED-QOL reflect higher symptom severity. Finally, participants' satisfaction with their therapist was measured by one self-report question, asking participants to rate the satisfaction with their therapist on a scale of one (very dissatisfied) to ten (very satisfied).

Statistical analyses

The qualitative coding of therapist behaviors was conducted with support of software QSR Nvivo 10. The frequencies of therapist behaviors were exported to SPSS version 22, in

which the quantitative analyses were conducted. Regression analyses were conducted to investigate the relationship between therapist behaviors and participants' outcome and satisfaction with their therapist. Each regression model included the post-intervention score of the outcome measure as dependent variable, and three independent variables: 1) the type of therapist behaviors, operationalized as the relative frequency of A) therapist behaviors related to assessment and interventions, and B) therapist behaviors related to support and empathy (see results section) (A/B), 2) the total frequency of therapist behaviors, and 3) the baseline score of the outcome measure. With respect to the first independent variable, it needs to be noted that the third type of identified therapist behavior (i.e., formalities and procedure (see results section)) was not taken into account as it was considered unlikely that formalities such as greetings would be of influence on the outcome measures. Furthermore, a relative frequency score was calculated in order to deal with issues of multicollinearity, given that the frequency scores of the two types of therapist behaviors (A and B) were highly correlated. The second and third variables were included in each regression model to control for the total amount of therapist behaviors and participants' initial scores on the outcome measure respectively.

Missing data on the outcome measures were imputed using multiple imputation methods in the statistical software program R version 3.02 using predictive mean matching. Interactions were taken into account in the imputation procedure (Doove et al., 2014). For each outcome variable with missing data, the number of predictor variables was determined by the rule of thumb of 15 cases per potential predictor (Stevens, 2009). Variables that correlated the highest with the outcome variable were chosen as predictors for the missing outcome data. One hundred imputed datasets were generated. Results from all imputed datasets were pooled according to Rubin's rules (Rubin, 1987).

Results

Therapist behaviors

The final codebook consisted of 31 codes that defined and described the identified therapist behaviors (see Table 1). Over the 8-week intervention period, participants received a total of 1407 therapist support sessions. Skype sessions (*n*=53) were excluded. A total of 1354 therapist transcripts, stemming from 937 e-mails and 417 chats, were included for coding. In these transcripts, a total frequency of 40,216 therapist behaviors were coded. As shown in Table 1, the most frequent therapist behaviors were to ask questions in order to assess the situation or problem (12.3%), followed by showing empathy or compassion with a participant (12.1%). Helping a participant by providing advice or giving tips were other frequent therapist behaviors (together 11.3%).

Table 1. A list of therapist behaviors derived from an inductive content analysis from therapist support sessions within an Internet-based intervention for individuals with eating disorder symptoms.

Therapist behavior	Description	Example(s)	Total frequency of behavior (% of Total)	Mean (*SD*) frequency of therapist behavior per participant
To assess the situation	Psychologist asks a participant one or more question(s) in order to assess the situation or problem.	"Are you currently on a diet?" "Could you tell me a bit more about your home situation?"	4935 (12.3)	27.9 (26.7)
To show empathy or compassion	Psychologist shows compassion or empathizes with a participant, including whishing someone well or good luck.	"I can well imagine how you must feel right now." "I wish you all the best and really hope that you'll find the strength to fight your eating disorder problems."	4862 (12.1)	27.5 (23.3)
To positively reinforce	Psychologist makes the participant a compliment or positively reinforces the participant.	"Really? Wow, that's so brave of you!" "You did great!"	3810 (9.5)	21.5 (19.6)
To summarize	Psychologist summarizes what a participant has told or how she interprets what a participant has told.	"It sounds like you've been through a lot." "In your last e-mail you wrote that you are using food as a distraction for your emotions, …"	3337 (8.3)	18.9 (20.7)
To advise	Psychologist gives advise or stimulates a participant to take action. This code also includes homework assignments.	"Please try to write a relapse prevention plan. Make a list of high-risk situations and think of healthy ways of coping." "You should really talk to someone!"	2476 (6.2)	14.0 (14.5)
To greet	Psychologist greets a participant.	"Hello there!" "Have a good night, bye."	2429 (6.0)	13.7 (12.3)
To give tips or suggest an idea	Psychologist gives a tip or suggests something to a participant.	"Maybe you can try to take a walk?" "What do you think of writing it down, in order to prepare for the conversation with your GP?"	2056 (5.1)	11.6 (11.0)
To gauge	Psychologist is trying to gauge a participant's thoughts or opinion.	"What do you think of this idea?" "Would that be feasible for you?"	1910 (4.7)	10.8 (11.7)
To psychoeducate	Psychologist provides psychoeducation, including information about treatments, symptoms, service delivery or other mental health-related issues.	"Dieting and restrictive food intake can trigger binge eating episodes, which in turn can elicit feelings of shame, disgust, guilt and depression. Individuals often feel like they are caught up in a vicious cycle of negative mood and binge eating. In order to break this cycle it is important to focus on healthy eating and consuming 3 well-balanced meals and 3 healthy snacks a day."	1591 (4.0)	9.0 (9.8)

Therapist behavior	Description	Example(s)	Total frequency of behavior (% of Total)	Mean (*SD*) frequency of therapist behavior per participant
To confront	Psychologist confronts a participant with certain beliefs or behavior, or explains or reflects on issues that may be difficult to hear.	"Unfortunately, changing your behavior and developing new and healthier habits is difficult and takes time, it is not something that is easily done." "I've noticed that you are very busy, maybe you are demanding too much of yourself."	1363 (3.4)	7.7 (9.7)
To ask for, suggest, or establish the topic of conversation	Psychologist asks for, suggests, or establishes the topic of conversation or (a) certain goal(s) that may or will be addressed during the intervention period.	"What would you like to talk to me about today? How can I help you?" "In this e-mail I will get back to you on your question about how to reduce or stop binge eating successfully."	1274 (3.2)	7.2 (7.4)
To collaborate and being there for someone	Psychologist shows that she is there for a participant and that she is available for help. Or, psychologist emphasizes collaboration between her and the patient.	"I hope we can work together towards a healthier lifestyle in the next few weeks." "I'm here for you and I sincerely hope that I can help you with your problems."	1165 (2.9)	6.6 (6.6)
To listen	Psychologist 'listens' to a participant by letting the participant know that she has read what the participant has 'told'.	"Hmm…." "Oh… Okay."	1143 (2.8)	6.5 (14.3)
To motivate	Psychologist motivates or encourages a participant.	"It will be difficult, but remember that you are working on a life without eating disorder symptoms, in which you will feel more happy and at ease with yourself and your body." "Talking to your friends or family can really help to clear your mind. It may help you to clarify some things and reduce some stress."	1127 (2.8)	6.4 (8.5)
To reassure	Psychologist reassures a participant.	"Let me reassure you that you are not the only one and that it's not crazy at all." "It will be okay, you'll see."	1112 (2.8)	6.3 (6.5)
To show interest or making small talk	Psychologist shows interest in a participant or is making small talk.	"How was your weekend in Berlin? Berlin is a beautiful city with lots to see." "I was wondering how you've been doing in the past few days."	1093 (2.7)	6.2 (6.2)
To stimulate further contact	Psychologist encourages a participant to make a new appointment and stimulates further contact.	"Don't forget to schedule a new appointment for next week. See you then!" "I'm looking forward to your next e-mail."	803 (2.0)	4.5 (4.2)

Therapist behavior	**Description**	**Example(s)**	**Total frequency of behavior (% of Total)**	**Mean (*SD*) frequency of therapist behavior per participant**
To thank	Psychologist thanks a participant.	"Thank you for your reply" "Thank you for being so honest"	654 (1.6)	3.7 (5.1)
To address that there is limited time (left)	Psychologist addresses that time is running out (in chats) or that there is limited time or space to discuss all the issues raised by a participant (in e-mails). This code also includes announcements related to the limited time left with respect to the 8-week intervention period.	"We're running out of time, we only have 1 minute left…" "Time flies: this is already week 8, which means that you still have one last appointment left (to make)?"	487 (1.2)	2.8 (2.9)
To stimulate reflection and insight	Psychologist stimulates self-awareness and self-reflection, aiming for a participant to develop insights.	"How did you manage to eat a healthy diet this week without bingeing, what do you think helped you?" "Do you think there is a connection between the difficult situations at school and your relapse this week? What conclusion can you draw from this?"	399 (1.0)	2.3 (4.0)
To welcome	Psychologist welcomes a participant at the beginning of an e-mail or chat.	"Welcome!" "Good to 'see' you again."	365 (0.9)	2.1 (2.5)
To explain research procedures	Psychologist explains the procedures regarding the research trial or appointments with the psychologist	"You can schedule 3 appointments each week. Each appointment is either one e-mail or a a 20-minute chat or Skype session." "In case you make an e-mail appointment, you will have to e-mail me before the day and time of the appointment."	289 (0.7)	1.6 (2.4)
To correct, clarify, or excuse	Psychologist corrects or excuses herself, or aims to clarify incomprehensible text (e.g., typo or unknown abbreviation).	"I'm sorry I have to cancel our session this afternoon." "What do you mean with *'bck'*?"	274 (0.7)	1.6 (2.3)
To challenge cognitions and beliefs	Psychologist challenges certain dysfunctional cognitions/beliefs of a participant.	"Do you really think so? Could it be another reason? Maybe they're just concerned?" "Do you really believe that you are weak in case you ask your family for help? Would you believe your sister to be weak in case she asks for your help with anything?"	267 (0.7)	1.5 (2.6)

Therapist behavior	Description	Example(s)	Total frequency of behavior (% of Total)	Mean (*SD*) frequency of therapist behavior per participant
To ask for one's experience or feelings	Psychologist asks a participant for one's experience of a situation, or asks about one's feelings/emotions.	"And how does that make you feel?" "How was it for you to write it all down?"	234 (0.6)	1.3 (2.1)
To stimulate thinking about possible solutions	Psychologist stimulates or encourages a participant to think of possibilities of how to solve a particular problem.	"What do you think you need in order to reduce some stress?" "Can you think of ways to reduce the binges somehow?"	232 (0.6)	1.3 (1.8)
To acknowledge the boundaries of one's knowledge	Psychologist acknowledges the limits of one's knowledge or position as a supporter during the 8-week Intervention period.	"Unfortunately I don't know the answer to that question, since I'm not a nutritionist…" "I'm sorry but I can't give you a diagnosis, therefore you would have to go see a doctor or mental health professional."	215 (0.5)	1.2 (1.8)
To express concern	Psychologist expresses worry or concern.	"I am really worried about you, your weight is alarmingly low." "It's very dangerous to keep doing this, it really concerns me."	107 (0.3)	0.6 (1.4)
To concretize aims or goals	Psychologist concretizes particular aims or goals of a participant, or asks a participant to concretize these by asking for example how exactly, when, where and with whom.	"What are you planning to eat exactly? And how much, when and with whom?" "So what do you say, trying not to compensate at least 1 day this week? Or maybe 2 days?"	88 (0.2)	0.5 (1.2)
To communicate regarding technical problems	Psychologist says or asks something about technical problems.	"Are you still there? Having trouble with your Wi-Fi?" "I just sent you a link, but I think you didn't receive it? Let me try again."	72 (0.2)	0.4 (1.0)
To establish a participant's absence or to ask for the reasons of absence	Psychologist establishes a participant's absence or points out that a participant has not scheduled as many appointments as possible. This code also includes the psychologist asking for the reason(s) for the lack of contact.	"I've noticed that you didn't show up at our last appointment. Can I ask why?" "I've noticed that you scheduled one appointment with me for next week, while we can have 3. Why is that?"	47 (0.1)	0.3 (0.7)

The 31 therapist behaviors were grouped under three higher order categories: 1) support and empathy, 2) assessment and interventions, and 3) formalities and procedure (see Table 2 for more details). Forty-eight percent (*n*=19,282) of the therapist behaviors consisted of behaviors related to being supportive and showing interest and empathy, whereas 40.2% (*n*=16,149) of the therapist behaviors included assessment, interventions and counseling. Finally, 11.9% (*n*=4785) of the therapist behaviors was related to formalities and explaining (research) procedures.

Table 2. Broad categories of therapist behaviors derived from an inductive content analysis from therapist support sessions within an Internet-based intervention for individuals with eating disorder symptoms.

Support and Empathy
To collaborate and being there for someone
To show interest or making small talk
To listen
To establish a participant's absence or to ask for the reasons of absence
To stimulate further contact
To show empathy or compassion
To reassure
To gauge
To summarize
To positively reinforce
Assessment and Interventions
To advise
To give tips or suggest an idea
To challenge cognitions and beliefs
To confront
To motivate
To psychoeducate
To concretize aims or goals
To stimulate reflection and insight
To stimulate thinking about possible solutions
To express concern
To ask for, suggest, or establish the topic of conversation
To assess the situation
To ask for one's experience or feelings
Formalities and Procedure
To thank
To welcome
To greet
To communicate regarding technical problems
To correct, clarify, or excuse
To explain research procedures
To address that there is limited time (left)
To acknowledge the boundaries of one's knowledge

Therapist behaviors and outcome

The results of the regression analyses investigating the relationship between the type of therapist behaviors and outcome are presented in Table 3. The type of therapist behavior did not significantly predict any of the post-intervention outcome scores tapping psychopathology (all $p > .05$), nor did the total frequency of therapist behaviors.

Therapist behaviors and participants' satisfaction

The type of therapist behaviors was found to make a significant unique contribution in predicting participants' satisfaction over and above the total frequency of therapist behaviors (see Table 3). The more therapists showed behaviors related to assessment and counseling relative to behaviors concerning support and empathy, the higher participants' satisfaction with their therapist. In addition, higher frequencies of therapist behaviors were shown to predict higher satisfaction rates of participants with their therapist.

Table 3. Results of the regression analyses with therapist behaviors as predictors for multiple outcome measures in the context of an Internet-based self-help intervention with individual therapist support.

Independent variables: Post-intervention scores	Baseline scores	Total amount therapist behaviors	Type of therapist behaviors^
	B (SE), t	*B (SE), t*	*B (SE), t*
EDE-Q	0.95 (0.10), 9.94***	<0.001 (<0.001), -0.84	0.35 (0.35), 1.01
ED-QOL	0.83 (0.07), 11.23***	<0.001 (<0.001), -0.99	0.22 (0.17), 1.32
SEED-AN	0.78 (0.05), 14.28***	<0.001 (<0.001), -0.80	-0.02 (0.10), -0.17
SEED-BN	0.66 (0.07), 9.48***	<0.001 (<0.001), -1.20	-0.01 (0.19), -0.06
PTQ	1.01 (0.09), 11.27***	<0.001 (<0.001), -0.56	0.29 (0.26), 1.11
PHQ	0.76 (0.08), 9.38***	<0.001 (<0.001), 0.30	1.20 (0.98), 1.22
Satisfaction psychologist	n/a	0.003 (0.001), 4.14***	1.23 (0.55), 2.23*

* $p \leq .05$, ** $p \leq .01$ *** $p \leq .001$

EDE-Q = Eating Disorder Examination Questionnaire, ED-QOL = Eating Disorder-related Quality Of Life, SEED = Short Evaluation of Eating Disorders, AN = Anorexia Nervosa, BN = Bulimia Nervosa, PTQ = Perseverative Thinking, PHQ = Patient Health Questionnaire.

^ Relative frequency of therapist behaviors related to assessment and interventions versus therapist behaviors related to support and empathy.

Discussion

This study qualitatively explored therapist behaviors that were provided in the online guidance as part of an Internet-based intervention for ED psychopathology. Also, it was investigated whether certain types of therapist behaviors were associated with participants' outcome and satisfaction with their therapist respectively. A total of 31 therapist behaviors were identified, which were categorized under three higher-order categories. The majority of the therapist behaviors (48%) were related to being supportive

and showing interest and empathy. Approximately 40% of all therapist behaviors were related to assessment, interventions and counseling, whereas only a minority (12%) of behaviors pertained to formalities and explaining procedures. The type of therapist behaviors did not predict participants' outcome in terms of psychopathology, but did significantly predict participants' satisfaction with their therapist. That is, the more therapists had shown behaviors related to assessment and counseling relative to behaviors concerning support and empathy, the higher participants' satisfaction with their therapist.

The finding that most of the therapist behaviors were supportive and empathic is comparable to the findings of previous studies investigating therapist guidance within E-health interventions for bulimia nervosa (Sánchez-Ortiz et al., 2011), generalized anxiety disorder (Paxling et al., 2012), and depressive symptoms (Holländare et al., 2015). However, one apparent difference emerged when comparing our categorizing scheme to that of the two studies investigating an Internet-based CBT for anxiety and depression (Holländare et al., 2015; Paxling et al., 2012). Our most commonly identified individual therapist behavior was asking questions in order to assess participants' situation or problem (12.3%), which was not identified by the other two (Holländare et al., 2015; Paxling et al., 2012). A possible explanation is that the therapist guidance in the current study was based on a methodology where the therapist always had to clarify the needs, problems, or questions of a participant first, before starting to elaborate on these, trying to find ways for the participants to cope with their problems, or answering questions accordingly (Schalken et al., 2010). In contrast, the guidance in the two above-mentioned studies were mainly focused on fostering adherence to the intervention and providing feedback on homework assignments (Holländare et al., 2015; Paxling et al., 2012).

In contrast to two previous studies (Holländare et al., 2015; Paxling et al., 2012), we did not find a significant association between the type of therapist behaviors and participants' symptom improvement. It is difficult to speculate about possible explanations for this discrepancy in findings as the studies differed in many ways. For example, in their categorization schemes and statistical procedures, as well as in the type of E-health interventions on top of which the therapist guidance was provided, and the type of psychological problems being targeted. Our findings are in line with three studies that causally investigated the effect of type of therapist support on outcome by experimentally manipulating the type of therapist support. Two of these studies (Titov et al., 2010; Robinson et al., 2010) were in the field of anxiety and depression, demonstrating no significant differences in outcome between Internet-based CBT guided by a clinician using specific therapeutic techniques, or by a technician being mainly supportive and encouraging. Similarly, Alfonsson et al. (2015) demonstrated that enhancing both the

frequency (weekly versus everyday) and type of therapist support (supportive and friendly versus therapeutic techniques based on motivational interviewing) did not significantly affect treatment outcome in an Internet-based relaxation program for individuals with symptoms of stress and worry (Alfonsson et al., 2015). Regarding the frequency of therapist support, our randomized controlled trial (Aardoom et al., 2016) and one other trial (Klein et al., 2009b) also failed to identify an incremental effect in outcome when enhancing the frequency of therapist support. Thus, preliminary studies seem to suggest that enhancement of the frequency of support and the type of therapist support do not necessarily improve treatment outcomes. However, more experimental studies are needed in order to further examine and establish the effects of the frequency and type of therapist support within E-health interventions.

This is the first study to investigate the association between the type of therapist behaviors and satisfaction of participants within an Internet-based intervention for mental health problems. The fact that participants were more satisfied when therapists showed relatively more behaviors related to assessment and interventions relative to behaviors concerning support and empathy, might suggest that participants need and expect a certain kind of professionalism alongside having someone supporting them and being empathic. This is in line with findings of Traviss et al. (2013), who conducted interviews with participants and therapists as part of a trial investigating guided self-help for disordered eating. Although all participants and therapists stressed the importance of receiving supportive guidance, they also mentioned the therapeutic skills of the therapist as being important, and felt that prior professional training was necessary in order to help and deal with participants' difficulties and problems encountered. Furthermore, the findings are in line with a previous study by Gulliksen et al. (2012), who conducted a qualitative in-depth study of preferred health professional characteristics by patients with anorexia nervosa. Amongst other things, therapists' expertise was found to be associated with treatment satisfaction.

The finding that a higher frequency of therapist behaviors was related to higher satisfaction of participants with their therapist is somewhat in contrast to findings of Klein et al. (Klein et al., 2009b), as well as the main findings of our randomized controlled trial (Aardoom et al., 2016) that both demonstrated no differences in satisfaction between participants who received therapist support once versus three times a week on top of an E-health program. This discrepancy might be explained by the more detailed characterization and assessment of the frequency of therapist support in the current study. By counting the number of therapist behaviors as received by participants within each support session, the variation of the frequency of therapist behaviors within the support sessions is taken into account. The assessment of the frequency of therapist

support in a continuous instead of categorical way, may be a better approximation of the amount of therapist support received.

Participants' satisfaction with their therapist is closely related to the concept of therapeutic alliance (Quirk, Erdberg, Crosier, & Steinfeld, 2007; Conte, Ratto, Clutz, & Karasu, 1995; Kim, Kim, & Boren, 2008). In fact, the therapeutic alliance is an important determinant of individuals' satisfaction with their therapist (Quirk et al., 2007; Kim et al., 2008). Numerous studies have demonstrated that a positive and stable therapeutic alliance can be established within E-health intervention (Knaevelsrud & Maercker, 2006; Andersson et al., 2012; Cook, 2002; Klein et al., 2009a), which also seems to be reflected in the high satisfaction ratings of participants with their therapists in the current study. However, research into factors that may influence the therapeutic alliance in E-health interventions is scarce (Sucala, Schnurr, Constantino, & Miller, 2012). The fact that the type of therapist behaviors in the current study was related to participants' satisfaction but not outcome, is interesting. This might suggest that therapist behaviors related to assessment and interventions, may help to enhance the satisfaction of participants, but not participants' outcome. Interestingly, two studies by Alfonsson et al. (2015) and Andersson et al. (2012) also demonstrated that increased satisfaction with the intervention due to enhancement of therapist support did not carry over in increased effectiveness of the E-health intervention. Notwithstanding the importance of establishing a positive therapeutic alliance (Beck A.T., Rush A.J., Shaw B.F., & Emery G., 1979), the therapeutic alliance may be necessary, yet not sufficient for therapeutic change within guided Internet-based interventions.

This study has several strengths and limitations. Although the current study has established a temporal relationship between therapist behaviors and outcomes, an experimental study would be needed in order to investigate the causal relationship. Another limitation is that conducting qualitative research is inherent to subjective interpretation of the data and there may have been different ways of understanding and making sense of the current data. However, the inductive Grounded Theory approach has allowed categories of therapist behaviors to emerge from the data, instead of being forced through the use of pre-existing categories (Glaser et al., 1967). Furthermore, a good level of intercoder reliability was established in the current study, and by using qualitative methods, this study has provided an in-depth view on what therapists actually do within the therapist support sessions that were offered in addition to an Internet-based self-help intervention for ED psychopathology. This study only focused on therapist behaviors, not participant behaviors, since focusing on therapist behaviors could lead to valuable insights regarding how to effectively and cost-effectively implement therapist guidance in E-health interventions. Exploring participants' behaviors might be interesting

as well (Svartvatten, Segerlund, Dennhag, Andersson, & Carlbring, 2015). Finally, Skype sessions were not included. However, we consider it unlikely that inclusion of the few Skype sessions (*n*=53, 4%) would alter the results.

In order to fully explore and understand the role of therapist guidance within E-health interventions, more studies are needed that specifically investigate the behaviors of therapists in relation to outcome. Furthermore, randomized controlled trials that experimentally investigate the effects of type of therapist support (for example supportive versus CBT techniques) on outcome are needed. Lastly, the type of therapist support needs to be further examined across different populations, as well as in the context of different E-health interventions.

In conclusion, the current study has opened the black box of therapeutic support that was provided in addition to an Internet-based intervention for ED psychopathology. More therapist behaviors related to assessment and interventions relative to behaviors concerning support and empathy were associated with participants' satisfaction with their therapist, but not with participants' outcome in terms of psychopathology. The effects of the type of therapist behaviors on outcomes within E-health interventions warrants further investigation. Such research could lead to valuable insights on how to most effectively and cost-effectively implement therapist guidance in E-health interventions. That is, what a therapist needs to do in order to achieve an additional treatment effect.

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