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Combined Face-to-Face and Online Cognitive-Behavioral Therapy for High Distress of Colorectal Cancer Survivors: A Case Study

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This case study evaluates the COloRectal canceR distrEss reduCTion (CORRECT) intervention, a blended cognitive-behavioral therapy (bCBT) combining face-to-face (F2F) therapy with an interactive self-management website to reduce high distress in colorectal cancer survivors (CRCS). A cognitive-behavior therapist treated a 74-year-old male CRCS with bCBT for 4 months. At baseline, postintervention, and 7- and 14-months follow-up he filled in questionnaires assessing psychological distress (primary outcome Brief Symptom Inventory-18 [BSI-18]), anxiety, fatigue, fear of cancer recurrence, cancer-specific distress, self-efficacy, and quality of life. Reliable Change Indexes were used to analyze effects over time. Therapeutic alliance and intervention evaluation were assessed postintervention. An independent clinical psychologist performed a semi-structured interview 10 months from baseline. A detailed description shows the course of bCBT. Quantitative analyses showed improved postintervention psychological distress. Most secondary outcomes improved. Anxiety and cancer-specific distress remained improved during follow-ups. Therapeutic alliance and patient satisfaction were high. This study showed how a combined F2F and online intervention was successful in reducing distress of a cancer survivor. The treatment protocol appeared feasible and will be tested in a randomized controlled trial.

COLORECTAL cancer (CRC) is the third most prevalent cancer worldwide, causing around 862,000 deaths yearly (World Health Organization, 2018a, 2018b). Cases of CRC tumors almost doubled during the last decade in the Netherlands, reaching approximately 25,000 diagnoses in 2016 (Netherlands Comprehensive Cancer Organisation, 2018). Mortality rates for CRC have decreased worldwide due to improved treatment and medical population screening methods (Chiu et al., 2015; Clouston et al., 2017; Greuter et al., 2016; Maruthappu et al., 2016; Nishihara et al., 2013). Currently around 65% of CRC patients survive at least 5 years after diagnosis in the Netherlands (Netherlands Comprehensive Cancer Organisation, 2018).

Around 33–44% of CRC survivors (CRCS) are reported to experience high distress in the 5 years after diagnosis (Dunn et al., 2013; Jefford et al., 2011; Zabora, Brintzenhofszoc, Curbow, et al., 2001). The National Comprehensive Cancer Network (NCCN, 2017) defines distress as “an unpleasant

experience of mental, physical, social, or spiritual nature.” Distress is related to depression (Jansen et al., 2010; Medeiros et al., 2010; Mols et al., 2018; Mosher et al., 2016; Phipps et al., 2008; Sehlo & Al Ahwal, 2013), anxiety (Medeiros et al., 2010; Mols et al., 2018; Mosher et al., 2016), fear of cancer recurrence (Custers et al., 2016; Hefner et al., 2017), fatigue and lack of energy (Phipps et al., 2008; Schneider et al., 2007; Wieldraaijer et al., 2017), negative body image (Phipps et al., 2008; Schneider et al., 2007; Smith et al., 2017), diarrhea and bowel problems (Phipps et al., 2008; Schneider et al., 2007; Wieldraaijer et al., 2017), sexual dysfunction (Hendren et al., 2005; Phipps et al., 2008), pain (Phipps et al., 2008; Wieldraaijer et al., 2017) and social difficulties, especially for stoma patients (Smith et al., 2017; Wieldraaijer et al., 2017). These different distress-related symptoms are correlated (Agasi-Idenburg et al., 2017) and can have a great impact on the quality of life (QOL) of CRCS (Aminisani, Nikbakht et al., 2017; Mols et al., 2018). Distress and related symptoms are a severe problem in the growing group of CRCS.

Reviews on guided eHealth cognitive-behavioral therapies (CBTs) for diverse psychiatric and somatic patients indicate that these are equally effective as face-to-face (F2F) treatments (Andersson et al., 2014; van Beugen et al., 2014; Wright et al., 2005). A meta-review of QOL

Keywords: eHealth; cognitive-behavior therapy; colorectal cancer survivors; case study; psychological distress

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treatments in different cancer patient populations confirms that F2F interventions are increasingly combined with telephone and online interventions (called “blended therapy”; [Duncan et al., 2017](#)). This review found CBT to be an intervention with long-lasting effects on QOL in cancer survivors. Accordingly, blended CBT (bCBT) proved to be efficient for treating fear of cancer recurrence in a mixed-tumor cancer patient group ([van de Wal et al., 2017](#)). However, to our knowledge no traditional or bCBT intervention has been tested yet in a randomized controlled trial (RCT) to reduce distress of CRCs.

There is limited evidence for the efficacy of supportive treatments for distress-related problems in CRCs. A systematic review examining 14 psychosocial interventions for CRC patients ([Mosher et al., 2017](#)) and six additional studies ([Acevedo-Ibarra et al., 2019](#); [Dong et al., 2019](#); [Hawkes et al., 2014](#); [Jefford et al., 2016](#); [Kim et al., 2019](#); [Lepore et al., 2015](#)) were found. Two studies showed that psychoeducation reduced anxiety and depression of CRC patients before (observational study) and during medical treatments ([Kim et al., 2019](#); [Zhang et al., 2014](#)). Another study examining telephone reminiscence therapy found improvements in depression for CRC patients undergoing chemotherapy ([Dong et al., 2019](#)). However, eight other studies, including patients’ presurgery ([Haase et al., 2005](#); [Harrison et al., 2011](#); [O’Connor et al., 2014](#)) with late-stage/metastatic diseases ([Barsky Reese et al., 2014](#); [Lee et al., 2010](#); [Ross et al., 2005](#); [Young et al., 2013](#)), or during medical treatment ([Hendren et al., 2012](#)), showed no significant effect on distress. These findings suggest the relevance of carefully taking into consideration the timing of intervention (before, during, or after medical treatment) and stage of disease (e.g., metastatic or not) when designing and providing a distress-reducing intervention.

Of studies focusing on CRCs after medical treatment, only two RCTs were found to have significant effects on different psychological outcomes ([Mosher et al., 2017](#)). A progressive muscle relaxation training reduced anxiety and depression ([Cheung et al., 2003](#)), and an emotional expression group intervention reduced distress ([Carmack et al., 2011](#)). However, these positive effects were limited to stoma patients ([Cheung et al., 2003](#)) and no long-term effects were found ([Carmack et al., 2011](#)). Another study was a feasibility study with a small sample size suggesting that shortened cognitive-behavioral stress management could be an acceptable intervention and possibly effective in reducing posttraumatic stress, whereas no positive effects on distress were found ([Acevedo-Ibarra et al., 2019](#)). The remaining six trials showed no significant intervention effects (on distress; [Beaver et al., 2012](#); [Edgar et al., 2001](#); [Hawkes et al., 2014](#); [Jefford et al., 2016](#); [Lepore et al., 2015](#); [White et al., 2012](#))—though it should

be noted that the main goal of two studies was not to reduce psychological symptoms ([Beaver et al., 2012](#)) and distress specifically ([Hawkes et al., 2014](#)). Possible reasons for a lack of intervention effect were missing data ([Beaver et al., 2012](#)), structural limitations of the RCT (e.g., small-group sizes; [Edgar et al., 2001](#)), contact frequency during the intervention ([White et al., 2012](#)) or low-intensity therapy with only 2 weeks’ duration ([Faller et al., 2013](#); [Lepore et al., 2015](#)), and no reported unmet needs at baseline ([White et al., 2012](#)) or psychological distress at study entry ([Edgar et al., 2001](#); [Faller et al., 2013](#); [Jefford et al., 2016](#); [Lepore et al., 2015](#)). Three of the discussed studies incorporated CBT-based techniques in their interventions ([Acevedo-Ibarra et al., 2019](#); [Edgar et al., 2001](#); [Hawkes et al., 2014](#)). In conclusion, distress interventions for CRCs have been diverse and no long-term treatment effects for a broader group of CRCs have been found so far.

New psychological interventions for CRCs have the opportunity to optimize treatments based on earlier research and take advantage of new health care methods. Online (eHealth) interventions offer more flexible treatment times, reduced travel for patients, require fewer therapist contact hours, and therefore may lower therapy costs ([Leykin et al., 2012](#); [Wright et al., 2005](#)). Furthermore, eHealth intervention exercises present an opportunity to support active patient participation in their treatment progress, as advocated with the concept of “participatory medicine” ([Frydman, 2010](#)). The COloRectal canceR distrEss reduCTion (CORRECT) intervention was designed to meet the need for CBT for distress in CRCs after medical treatment ([Leermakers et al., 2018](#)). Taking eHealth advantages and the concept of participatory medicine into account, it is delivered as bCBT during 4 months, combining F2F sessions and telephone consultations with a cognitive-behavior therapist, with an interactive self-management website. Patients complete self-management activities on the website at a convenient time and place. Decreasing therapist involvement toward the end of the treatment seeks to increase the self-management of cancer-related distress. The goals of the present case study were to describe the course of this bCBT and to provide evidence for the feasibility of the treatment protocol in CRCs.

Method

Case Selection

The CORRECT intervention was evaluated in a pilot study ([Leermakers et al., 2018](#)). Mr. A was selected from this pilot study for the present case study because he had high distress at baseline, a clear need for help, complaints representative of for the CRCs target group, completed the bCBT protocol, used the CORRECT website (instead of the paper version), completed all assessments, and gave

informed consent to participate in this case study, which included two further assessments (interview and 14-month follow-up questionnaire). To ensure anonymity, personal details have been altered.

Case Description

Mr. A was a 74-year-old White man living in the Netherlands. He had completed secondary education and worked as a baker until he was 59 years old. He had two children with his first wife and several grandchildren. Since she died of cancer more than 15 years ago, Mr. A remarried. Ten years ago his brother died of colon cancer 2 years after diagnosis.

Mr. A started to have complaints of diarrhea in the summer of 2013. Following colonoscopy in 2013, he was diagnosed with rectum carcinoma. His medical treatment consisted of radiotherapy (5 fractions of 5Gy) followed by six rounds of chemotherapy (capecitabine-oxaliplatin). In 2014, he had surgery to remove the tumor. To Mr. A's disappointment, temporary colostomy was not successful, resulting in a permanent colostomy. Medical follow-up consultations followed after 6 weeks and every 3 months after surgery; blood tests and abdomen scans were conducted every 6–8 months for the first 2 years. A colonoscopy followed 18 months after surgery, corresponding to the 5-year follow-up plan of the National Colorectal Cancer Guidelines (Comprehensive Cancer Centre the Netherlands, 2014).

During a follow-up investigation in mid-2016, Mr. A reported having difficulties in dealing with the physical consequences of CRC treatment. He reported peripheral neuropathy in his legs and hands, limiting him in his daily activities. In addition, the colostomy gave him physical and emotional discomfort. Mr. A was referred to the Department of Medical Psychology to participate in the CORRECT pilot study.

A screening showed a high distress score of 8 on the distress thermometer (DT; see the "Measurements" section for questionnaire details; National Comprehensive Cancer Network, 2003). The patient reported problems on physical (including diarrhea, fatigue, memory, concentration, pain, sleep, and tingling in hands/feet) and emotional DT domains (including fear, tension/nervousness, and sadness). A baseline assessment was completed before the intake interview and start of the intervention.

CORRECT Intervention

The CORRECT intervention is a combination of five F2F and three telephone therapy sessions, and an interactive self-management website ("blended therapy"). Trained psychologists in medical psychology departments

deliver the intervention over 14 weeks, starting with a 90-minute intake interview. Between sessions, patients complete online assignments at the CORRECT website. Access to the website is available for 7 months, starting 1 week before the first F2F session. An overview of the planned structure and time frame of the intervention is given in Table 1.

The intervention includes CRC-specific CBT techniques, together with motivational support, values clarification, and personalized feedback, to ensure that the patient understands the assignments and to promote adherence. The primary treatment goal of the CORRECT intervention is to reduce the distress-associated physical consequences of CRC and to improve mood and QOL. Three treatment modules are available for (a) distress due to physical consequences, (b) depressive mood, and (c) anxiety and fear of cancer recurrence. Further details of the developmental process and content of the CORRECT intervention are described in the study protocol (Leermakers et al., 2018).

A female licensed cognitive-behavior therapist with ample experience in medical psychology (SSK) offered the intervention in this case study. An example of the content of the CORRECT bCBT based on Mr. A's treatment plan is displayed in Table 1.

Measurements

Quantitative and qualitative measurements were used to assess the feasibility of the CORRECT bCBT in terms of acceptability, satisfaction and effectiveness for the patient, therapist adherence to protocol, and meeting the demand of the patient. These topics were chosen based on areas of feasibility proposed by Bowen et al. (2009).

Quantitative Measurements

Psychological questionnaires were filled in at baseline (T1, August 2016), postintervention at 4 months (T2, December 2016), 7-months follow-up (T3, March 2017), and 14-months follow-up (T4, October 2017) to assess the effectiveness for this patient.

Screening instrument. The DT (National Comprehensive Cancer Network, 2003) measures distress on a visual scale from 0 (*no distress*) to 10 (*extreme distress*) using a cutoff score of 5 to detect clinical distress (Tuinman et al., 2008). DT scores were measured at all assessments.

Outcome measures. The primary outcome measure of psychological distress was the Brief Symptom Inventory–18 (BSI-18; Derogatis, 2000; Zabora, BrintzenhofeSzoc, Jacobsen, et al., 2001). The 18 items of the BSI-18 are grouped into three subscales: anxiety, depression, and somatization. Scores on a 5-point Likert scale range from

Table 1
Detailed Structure and Time Frame of the CORRECT Intervention; Example Based on the Planned Treatment Course of the Case Study Patient

Week	Session	Module	Web-based homework	Content of online assignments
0		General introduction module	“Preparation to first session”: introduction of website, study, and intervention	Reading texts with information about the website, the CORRECT treatment, and the study.
1	1: F2F—discussing problems experienced by the patient during cancer follow-up and problems reported on baseline assessment to define goals and select treatment modules	General introduction module	“After the first session”: treatment contract, explanation of CBT, setting treatment goals	Setting treatment goals. Filling in a questionnaire about values. Reading a text about CBT. Describing a difficult situation. Filling in the DT.
2	2: F2F—explaining CBT principles, specified for the first chosen module	General introduction module Module 1: “Distress due to physical consequences”	Online 1: understanding the physical changes after medical treatment and their consequences	Writing down topics discussed in the last session with the therapist. Reading texts and watching video interviews of other patients about the physical consequences of CRC and how to cope with them. Filling in a coping questionnaire, a fatigue questionnaire, and a questionnaire about sexual and intimacy problems. Filling in the DT.
3	3: F2F—psychoeducation about physical consequences and cognitive restructuring	Module 1: “Distress due to physical consequences”	Online 2: practicing cognitive restructuring and relaxation	Writing down topics discussed in the last session. Reading a text about physical consequences and adaptive perspectives. Writing down dysfunctional thoughts in difficult situations and defining adaptive perspectives (cognitive restructuring). Relaxation exercise. Filling in the DT.
4 and 5	4: Telephone—discussing online assignments about adaptive perspectives	Module 1: “Distress due to physical consequences”	Online 3: behavioral changes toward physical consequences, like talking about them with relevant others and relaxation	Writing down experienced progress. Recurrent exercise practicing cognitive restructuring. Written exercise about learning to cope with physical consequences. Reading a text about physical consequences. Relaxation exercise. Filling in the DT.
6	5: F2F—evaluation of treatment course and option of starting second module	Module 1: “Distress due to physical consequences”	Online 4: practicing cognitive restructuring; introducing issue of social environment and support	Writing down topics discussed in the last session with the therapist. Recurrent exercise practicing cognitive restructuring. Reading a text and exercise about social support.

7	Module 2 (optional): Anxiety and FCR	Online 1: understanding anxiety and assignment CBT principle leading to adaptive perspectives	Reading a text and exercise about dealing with work and other social activities. Filling in the DT. Writing down topics discussed in the last session with the therapist. Reading texts about anxiety. Filling in the HADS. Written exercise about fear and cognitive restructuring. Recurrent exercise practicing cognitive restructuring. Setting long-term goals. Filling in the DT.
8 and 9	6: Telephone—discussing online assignments and possible problems, explain next assignment	Online 5: practicing cognitive restructuring, reflecting on treatment so far, and looking forward	Writing down topics discussed in the last session with the therapist. Recurrent exercise practicing cognitive restructuring. Reading a text about understanding anxiety. Writing down a hierarchy of fearful situations. Written exercise about behavioral experiments. Filling in the DT. Writing down experienced therapy progress. Recurrent exercise practicing cognitive restructuring. Written exercises about behavioral experiments. Relaxation exercises. Filling in the DT.
10	Module 2 (optional): “Anxiety and FCR”	Online 2: practicing cognitive restructuring and introducing behavioral experiment with regard to anxiety	Writing down topics discussed in the last session with the therapist. Recurrent exercise practicing cognitive restructuring. Reading a text about understanding anxiety. Writing down a hierarchy of fearful situations. Written exercise about behavioral experiments. Filling in the DT. Writing down experienced therapy progress. Recurrent exercise practicing cognitive restructuring. Written exercises about behavioral experiments. Relaxation exercises. Filling in the DT.
11	7: Telephone—discussing online assignment, reflecting on treatment, and explaining next assignment	Online 3: practicing cognitive restructuring, behavioral experiment, and relaxation	Writing down topics discussed in the last session with the therapist. Recurrent exercise practicing cognitive restructuring. Reading a text about understanding anxiety. Writing down a hierarchy of fearful situations. Written exercise about behavioral experiments. Filling in the DT. Writing down experienced therapy progress. Recurrent exercise practicing cognitive restructuring. Written exercises about behavioral experiments. Relaxation exercises. Filling in the DT.
12	Module 2 (optional): “Anxiety and FCR”	Online 4: practicing cognitive restructuring; introducing issue of social environment and support	Writing down topics discussed in the last session with the therapist. Recurrent exercise practicing cognitive restructuring. Reading a text and written exercise about behavioral experiments. Relaxation exercise. Reading a text about social environmental topics. Filling in the DT.

(continued on next page)

Table 1 (continued)

Week	Session	Module	Web-based homework	Content of online assignments
13		General closing module Module 2 (optional): “Anxiety and FCR”	“Preparation for last session”: reflecting on treatment, recognizing strengths, and relapse prevention plan Online 5: practicing cognitive restructuring and behavioral experiment; reflecting on treatment and looking forward	Writing down important topics to be discussed in the last session. Exercise about recognizing strengths. Evaluating treatment goals. Making a relapse prevention plan. Recurrent exercises practicing cognitive restructuring and reflecting on behavioral experiments. Evaluating therapy progress in the light of the treatment goals. Setting long-term goals. Filling in the DT.
14	8: F2F—discuss last online assignment, evaluate treatment goals and course of treatment, discuss relapse prevention plan, ongoing self-management, and future goals	General closing module	“Closing: how to move on?”: evaluation of treatment course and looking forward	Writing down topics discussed in the last session with the therapist and evaluating the treatment. Reading a text about how to save the exercises done on the website. Exercise about difficult situations during the next 3 months.

?/=/=Valid. F2F = face-to-face; CBT = cognitive-behavioral therapy; DT = distress thermometer; CRC = colorectal cancer; FCR = fear of cancer recurrence; HADS = Hospital Anxiety and Depression Scale.

0 (*not at all*) to 4 (*extremely*). Cutoff total scores were established at 10 for men and 13 for women (Zabora, BrintzenhofeSzoc, Jacobsen, et al., 2001).

Secondary outcome measures were anxiety, depressed mood, fatigue, fear of cancer recurrence, cancer-specific distress, self-efficacy, and perceived impact of physical consequences of CRC.

Anxiety and depressed mood were measured with the Hospital Anxiety and Depression Scale (HADS; Alexander et al., 2010; Annunziata et al., 2011; Norton et al., 2013; Vodermaier & Millman, 2011; Zigmond & Snaith, 1983). This instrument has 14 items with higher scores representing more symptoms. The total score has a clinical cutoff of 11.

The Checklist Individual Strength (CIS; Beurskens et al., 2000; Dittner et al., 2004; Vercoulen et al., 1994, 1999) is a well-validated instrument assessing fatigue. On a 7-point Likert scale ranging from *yes, that's true* to *no, that's not true*, high scores indicate more symptoms (some items are mirrored). Clinical cases are identified by a cutoff score of 35 on fatigue severity (Worm-Smeitink et al., 2017).

The Cancer Worry Scale (CWS; Custers et al., 2014, 2016; Douma et al., 2008; van de Wal et al., 2016) detects dysfunctional levels of fear of cancer recurrence. Scores on eight items on a 4-point Likert scale range from 1 (*never*) to 4 (*almost always*). A minimal score of 14 represents severe fear of cancer recurrence (FCR).

The Impact of Event Scale (IES; Creamer et al., 2003; Joseph, 2000; van der Ploeg et al., 2004) measures cancer-specific distress in terms of avoidant behaviors (eight items) and intrusive cognitions (seven items). Total scores of 9–25 indicate moderate and scores higher than 26 indicate serious cancer-related distress.

The Self-Efficacy Scale–28 (SE-28; Gielissen et al., 2007; Servaes et al., 2002; van den Berg et al., 2015) assesses sense of control in dealing with distress. Answers on the seven items are given on a 4-point Likert scale with higher scores representing better self-efficacy.

The European Organization for Research and Treatment (EORTC) of Cancer Quality of Life Questionnaire—Core 30 (QLQ-C30; Aaronson et al., 1993; Osoba et al., 1997) and the 38-item CRC-specific module (CR38; Sprangers et al., 1999) assesses QOL and the perceived impact of physical consequences of CRC. Higher scores on the functioning scales represent better functioning and QOL. Higher scores on the symptom scales represent more problems with specific symptoms. *T* scores ranging from 0 to 100 are used to define differences over time with 5–10 points considered small differences, 10–20 points medium differences, and more than 20 points large difference (Osoba et al., 1998).

For further information on outcome measures, see the study protocol (Leermakers et al., 2018).

Qualitative Measurements

Therapeutic alliance. The therapeutic relationship was assessed with the short version of the Working Alliance Inventory (WAI-S) questionnaire at T2 (Busseri & Tyler, 2003; Horvath & Greenberg, 1989). It is divided into three key aspects: (a) agreement on the tasks of therapy, (b) agreement on the goals of therapy, and (c) development of an affective bond (Munder et al., 2010). Answers on 12 items are given on a 5-point Likert scale ranging from 1 (*never*) to 5 (*always*).

Intervention evaluation. An intervention evaluation questionnaire with purpose-designed items was used to assess the overall treatment satisfaction, efficacy, and user-friendliness at T2. Items were scored on 5-, 6- or 10-point scales with higher scores reflecting more satisfaction, efficacy, and user-friendliness. In addition, questions about usefulness of different elements of the whole treatment were answered on 4- or 6-point scales. The last evaluation question was a ranking of preference of four possible ways of providing the intervention.

Interview. A clinical psychologist who was not involved in the treatment of Mr. A performed a purpose-designed semistructured interview with him at 10-months follow-up (June 2017). Questions addressed the evaluation of the therapeutic alliance, the effectiveness of and satisfaction with the intervention, and the intervention design.

Analysis

The course of Mr. A's treatment was outlined in order to give an in-depth description of the CORRECT bCBT and adherence to treatment protocol.

Reliable change scores were calculated for outcome measures to examine whether the intervention effects were not merely errors of measurement (Jacobson & Truax, 1991). With this method, postintervention scores were compared to baseline scores using norms of cancer patients (preferably data of CRC patients but these were not available for every measurement) and reliability coefficients of questionnaires. The statistical relevance of this measure is reported as Reliable Change Index (RCI; Jacobson & Truax, 1991). Change is considered reliable when RCI has a greater value than 1.96 ($p < .05$). Clinical significance of improvement is reached when the RCI is greater than 1.96 and when the posttreatment scores fall within the normal range (Jacobson & Truax, 1991).

The primary outcome was compared based on the 0.89 reliability of the BSI-18 and the standard deviation (*SD*) of 8.62 of the total score in a normative sample of adult

cancer survivors ($n = 1,543$, mean age = 55.5 years, $SD = 14.5$; Zabora, BrintzenhofeSzoc, Jacobsen, et al., 2001).

The normative sample for the CWS, HADS, IES, EORTC QLQ-C30, and EORTC CR38 was a group of 76 CRCs with a median age of 67.7 years (range 41–88 years) of which the SD s and reliabilities were received from the authors (Custers et al., 2016). The reliability coefficients used to analyze the case study patient's scores were 0.89 for the CWS, 0.85 for the HADS, 0.96 for the IES, 0.84 for the EORTC CR38 and 0.88 for the EORTC QLQ-C30 (Custers et al., 2016). The scores were analyzed with an SD of 4.0 for the CWS, 7.1 for the HADS, and 11.6 for the IES. EORTC QLQ-C30 and EORTC CR38 scores were based on SD s per subscale (see Table 3; Custers et al., 2016).

CIS fatigue scores were compared based on a 0.95 reliability (Worm-Smeitink et al., 2017) and a norm group of 71 bone and soft tissue malignant tumor patients with a mean age of 43 (range 18–65) and an SD of 14.0 (Servaes et al., 2003). The normative sample for the SE-28 were 150 breast cancer patients (mean age 50.8 years) with an SD of 2.7 for the Self-Efficacy Scale (van den Berg et al., 2015). Analyses were based on a 0.76 reliability measured at baseline that was received from the authors (van den Berg et al., 2015).

The DT was analyzed on clinical relevance based on the cutoff point. Therapeutic alliance and the intervention evaluation questionnaire were analyzed qualitatively.

The interview was transcribed verbatim. The transcript was thematically analyzed according to the prespecified evaluation categories by S.D. Mr. A's experiences with the blended therapy are summarized in these themes.

Results

Course of Treatment

Online "preintake"—Mr. A did the preparation and assignments "preparation to first session" on the CORRECT website (see Table 1). He scored 8 on the DT.

Session 1: face-to-face. Asked about his illness experience and current symptoms, Mr. A reported suffering from severe physical symptoms of pain and neuropathy since the cancer treatment. These symptoms limited him in his daily activities, especially walking. He used pain medication during the day (morphine plasters 15 mg; if necessary, additionally gabapentine 900 mg) but still suffered from high levels of pain. Before the cancer, Mr. A was a physically and socially active man (e.g., long-distance walks, swimming, volunteer work). He felt frustrated and angry that this changed as a result of his complaints. In dealing with his limitations, he tried to keep up with his high demands, ignored his complaints, and rested very little between activities, leading to overexertion and frustration. He also reported difficulties in dealing with

his colostomy, like frequent leakages. Ashamed of this problem, he did not talk about it with others and avoided activities like swimming. He also found it difficult to talk with others about other cancer-related issues, presuming others would not understand him, and he was reluctant to ask for help. He experienced erectile dysfunction and reduced libido following surgery. Although he and his wife communicated about these issues, he stated he felt less masculine. In addition, Mr. A described worries about cancer recurrence when confronted with physical symptoms like diarrhea or pain. He tried to deal with this anxiety by avoiding thinking about it and with distraction.

At the end of the first session, treatment goals were discussed using a visual display of the baseline questionnaire outcomes. The most important treatment goals for Mr. A were to diminish feelings of frustration and FCR when confronted with physical limitations. Based on this information, the therapist and patient agreed to start with the "distress due to physical consequences" (hereafter "physical consequences") module, followed by a second module: "anxiety and FCR" (hereafter "anxiety").

Online "postintake"—Mr. A did the assignments of the online session "after the first session" on the website. He scored a 7 on the DT.

Session 2: face-to-face. The second F2F session followed 3 weeks (instead of 1 week) after the first session, due to Mr. A's planned holiday. During this session, the online assignments were discussed with an emphasis on the treatment goals. In an online assignment, Mr. A described thinking "I'm going to die!" at the moment of cancer diagnosis. This situation was used to illustrate the relationship among thoughts, feelings, and behavioral consequences. The therapist explained that by changing his behavior and thoughts, eventually his feelings could be changed (cognitive restructuring). The session ended with an explanation of the online Session 1 of the physical consequences module.

Online 1: physical consequences module—Mr. A was not able to complete the online assignments due to technical problems with the website.

Session 3: face-to-face. The therapist explained that the physical and emotional consequences of CRC can be influenced by cognitive-behavioral factors. It appeared important to Mr. A to change his behavioral patterns of not talking about these physical consequences and hiding the impact of the disease, because this led to more feelings of shame, more misunderstandings in social encounters, and fewer chances of support from others. The therapist encouraged him to ask for help from others in difficult situations, like a colostomy leakage. Another behavioral pattern that Mr. A became aware of was that he rested very little between activities, leading to

overexertion. The technical issue of the website was resolved and it was agreed that he would do online Assignments 1 and 2 before the next session.

Online 1: physical consequences module—Mr. A filled in the required assignments of Online 1, including several short questionnaires to increase awareness of possible problems. The outcome scores suggested that his pain-coping behaviors could be improved by seeking more distraction and decreasing his physical activity levels. Furthermore, the outcome showed that he was dissatisfied with his sexual life. He scored an 8 on the DT. He forgot to complete the exercises of online Session 2.

Session 4: telephone. This session was planned 2 weeks instead of 1 week after Session 3 due to the patient's schedule. In this telephone consultation the therapist focused on discussing the online assignments, encouraging use of the website, and explaining the online assignments for the next session. Mr. A was very positive about the online video interviews with other patients; it made him feel less alone. In contrast to the observed dissatisfaction in the online questionnaire with his sexual life, he stated that dealing with his sexual problems was not an important treatment goal for him and it was only discussed briefly. Furthermore, he expressed feeling happier and had practiced asking for help in difficult situations. The therapist encouraged him to also practice with strategies to decrease his physical activity level and to spread activities more throughout the day and the week. It was agreed that he would do the online Sessions 2 and 3 before the next F2F session. The therapist evaluated the ability of the patient to catch up with the protocol. In line with treatment goals, Mr. A could practice planning the assignments at home between more active activities. If engaging in an extra assignment would be a burden to pursue a treatment goal, the therapist would have secured the pursuit of the treatment goal rather than following protocol.

Online Sessions 2 and 3 (as planned), 4 and 5 (patient's initiative): physical consequences module—Mr. A completed all remaining online assignments of the physical consequences module (online Sessions 2–5). In these online sessions he practiced with cognitive restructuring techniques in order to challenge dysfunctional thoughts (e.g., “Why does this happen to me?”; “I can't deal with this!”) and transform them into more adaptive thoughts (e.g., “I can manage if I focus on the things that I still can”). In addition, he mentioned in the online exercise that he practiced more with behavioral changes (e.g., resting more, alternating more between activity and inactivity, being more open to others, asking for help). In the final online session of this module he expressed confidence about achieving his short-term goals and he named long-term goals like doing more pleasant activities with family

and friends. The DT scores of these online sessions ranged between 7 and 9.

Session 5: face-to-face. The online assignments were discussed. Particular attention was given to the situations described in the cognitive restructuring exercises. Mr. A experienced positive consequences like speaking more openly about his stoma and physical limitations. He felt more understood and less frustrated. In addition, he benefited from alternating between activities and rests throughout the day, since this made him feel more calm and relaxed. He also found the relaxation exercise helpful. The therapist encouraged these behavioral changes. Cognitive restructuring with regard to Mr. A's high expectations regarding sports and hobbies (“I have to be able to do exactly what I did before I was sick”) was discussed in order to prevent overexertion and frustration (“It is not a must; I do this for fun”). Furthermore, it was discussed how he could better deal with social situations in which he experienced misunderstanding from others (e.g., talking about his feelings, changing the subject).

Since Mr. A still experienced high levels of anxiety when confronted with physical sensations (e.g., irregular defecation), it was agreed to change the focus of the treatment to the anxiety module starting with online Session 1.

Online 1: anxiety module—Mr. A completed preparatory exercises for the anxiety module. The cognitive restructuring exercises showed that he frequently practiced developing adaptive thoughts (“Believe in yourself,” “Look at possibilities instead of impossibilities”) and behaviors in difficult situations (e.g., talking more about difficulties with others, scheduling pleasant activities). Contrary to expectations, the anxiety questionnaire showed no heightened anxiety (HADS anxiety = 6).

Session 6: telephone. The therapist checked Mr. A's progress with the online assignments and encouraged his efforts to introduce more adaptive responses. Again, difficult situations like dealing with misunderstanding from others and responding to them by being more open about his complaints were discussed in more detail. In addition, he tried practicing adaptive thoughts (“I accept that irregular defecation is a normal symptom after having colorectal cancer,” “Being fearful is part of life after cancer”) and helpful behavior (e.g., going on with planned activities instead of avoiding these) in dealing with anxiety. In preparation for the next session, Mr. A was asked to complete online Activities 2 and 3 of the anxiety module.

Online 2 and 3: anxiety module—Mr. A expressed that communicating more openly with others instead of avoiding these confrontations helped him to reduce his feelings of frustration and anxiety. He described difficult

situations in his thought report (e.g., communicating with others openly when dealing with colostomy leakages instead of avoiding the gym). In addition, he described avoiding fearful situations, such as talking about cancer and hearing stories about other people with cancer recurrence. Challenging this avoidance, he practiced talking more openly with others about his cancer in the behavioral experiments. Additionally, Mr. A reported that relaxation exercises were helpful. He scored a 7 on the DT.

Session 7: telephone. The online assignments were discussed with Mr. A. The focus was how to deal with social encounters in which he did not receive the social support he hoped for. The therapist also discussed his fear regarding medical follow-up examinations. It was agreed that he would complete online Activities 4 and 5 of the anxiety module and the online session “preparation for last session.”

Online 4 and 5: anxiety module; online “preparation for last session”—Mr. A wrote in the online assignment that he could not fill in the thought reports since he no longer felt anxious. He benefited greatly from talking more openly to others about his health and asking others for help when needed. He also found the relaxation exercises helpful. Respectively, he scored a 4 and 5 on the DT in the online sessions. In the exercises of the online session “preparation for last session” Mr. A identified his good social support as a strength. He felt that he achieved his treatment goals: feelings of frustration were diminished, he was no longer bothered by anxiety, and his QOL had improved. His relapse prevention plan consisted of recognizing early signs of relapse (e.g., frustration, fatigue, pain, anxiety), pitfalls (e.g., people around you getting sick, problems with walking, wanting to do more than what I’m capable of), and helpful thoughts and behaviors (e.g., protecting my physical boundaries, being open, asking for help when needed). As long-term goals he mentioned continuing to talk with others, maintaining exercises, and going on vacation.

Session 8: face-to-face. The last F2F session was 2 weeks instead of 3 weeks after the seventh session due to holidays. Mr. A revealed that his feelings of frustration and anxiety were diminished. He appreciated that he was able to focus more on his present life and on future plans. Important outcomes from Mr. A’s perspective were that he was better able to respect his boundaries, ask others for help, and learning to relax.

Online “closing: how to move on?”—Mr. A completed the online assignments and evaluated the following gains of the treatment as most important: having a different perspective in life, and to be able to be more open to

others about his physical condition and limitations. Therefore, he felt more calm and relaxed.

Online assignments of depression module (patient’s initiative)—In addition to this last online closing module, Mr. A continued to access the website over a period of 3 weeks. He did some of the assignments of the depressive mood module. He read texts about depression and the relevance of physical exercise, completed thought reports (“Neighbor died who was as old as I am. That is hard and you think about it a lot. You ask why. I tried to focus on my own life again. That makes me calm and able to keep going”), and recorded daily activities and mood. He filled in several short questionnaires, showing no sign of depressive symptoms (HADS depression = 4) and consecutive DT scores of 5, 6, and 9.

Quantitative Outcomes

The results of the primary outcome BSI are shown in **Figure 1**. The BSI total score decreased between T1 and T2 from 12 to 3. This was a statistically significant (RCI = -2.23) and clinically relevant (score < 10) change. At both follow-up assessments (T3 and T4), no intervention effect on the BSI total scores was found but scores remained below the clinical cutoff point up to T3. The BSI somatization score showed no postintervention effect and increased significantly from T1 to T3 (RCI = 2.40). The BSI depression score decreased significantly (RCI = -2.19) between T1 and T2. At both follow-up assessments, no difference to baseline was found. The BSI anxiety score decreased significantly between baseline and all other assessments (RCI = -2.66).

The secondary outcome measures are displayed in **Table 2**. Almost all HADS, CIS (RCI = -2.03), CWS (RCI = -2.11), and IES (RCI = -6.08) scores improved statistically significant and/or clinically relevant postintervention. HADS scores showed no statistical differences between baseline and all following assessments. Nevertheless, the HADS total and anxiety subscale scores decreased below clinical cutoff at T2 and both follow-ups. The CIS fatigue severity score remained significantly decreased at T3 (RCI = -2.03) compared to baseline. At T4 the CIS score increased again to baseline level but scores stayed below clinical cutoff at all times. The CWS score increased again during follow-ups but the T2 and both follow-up scores remained under the clinical cutoff score contrary to baseline. The IES baseline total score indicated moderate adaptation problems. It remained significantly decreased at both follow-ups (RCI_{T1-T3} = -5.47, RCI_{T1-T4} = -3.65). At T2 and both follow-ups no adaptation problems were indicated anymore so that these improvements were of clinical significance. Significant improvements were found in both IES subscales (intrusion RCI_{T1-T2} = -6.02, RCI_{T1-T3} = -4.93, RCI_{T1-T4} = -5.47, and avoidance RCI_{T1-T2/T3} = -5.35). The SE-28 scores showed an increase with statistical relevance only during T4 (RCI = 3.21).

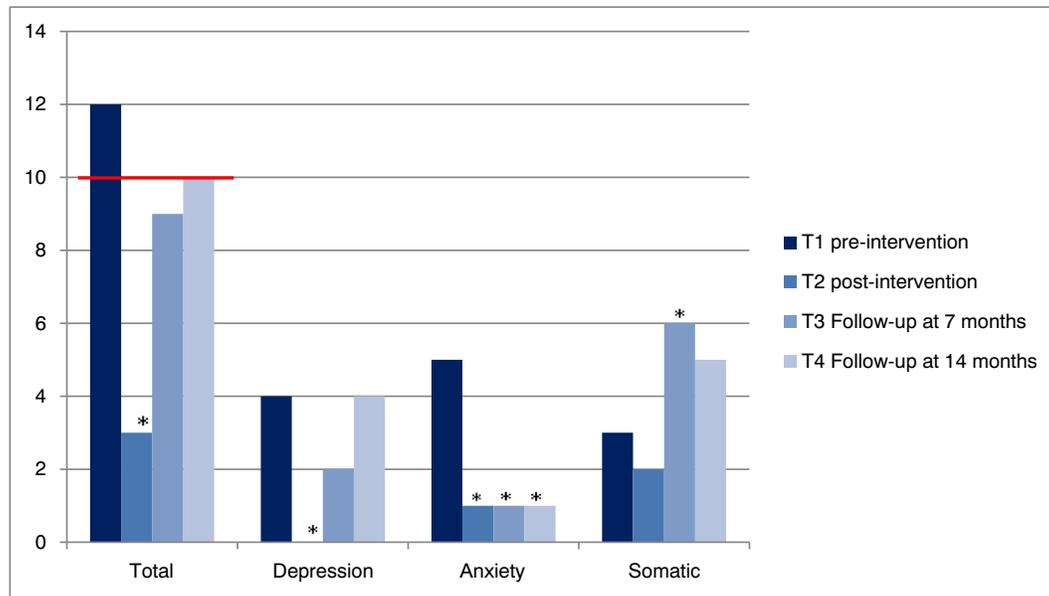


Figure 1. Primary outcome of treatment effectiveness (Brief Symptom Inventory–18 [BSI-18]) at four time points (T1, T2, T3, T4) with a cutoff score for the BSI-18 total of 10. *RCI value > 1.69, indicating a reliable change from baseline ($p < .05$).

Scores on the DT were above cutoff at T1, T2, and T3. At T4 the DT score decreased under the clinical cutoff score.

The EORTC QLQ-C30 and EORTC CR38 scores showed overall relatively low symptom and high-

functioning scores at T1. Sexual functioning and male sexual problems were the only scores that showed problematic values at T1 and were not improved at T2. See Table 3 for indications of clinical differences between baseline and all other scores.

Table 2
Secondary Outcome Variables at Four Time Points (T1, T2, T3, T4), Score Ranges, and Clinical Cutoff Scores

	Baseline (T1)	Postintervention (T2)	7-months follow-up (T3)	14-months follow-up (T4)	Range	Clinical cutoff
BSI-18						
Total	12	3	9	10	(0–72)	≥ 10
Depression	4	0	2	4	(0–24)	
Anxiety	5	1	1	1	(0–24)	
Somatic	3	2	6	5	(0–24)	
HADS						
Total	14	8	10	9	(0–42)	≥ 11
Depression	6	2	5	4	(0–21)	≥ 8
Anxiety	8	6	5	5	(0–21)	≥ 8
CIS	31	22	22	31	(20–140)	≥ 35
CWS	14	10	12	12	(8–32)	≥ 14
IES						
Total	20	0	2	8	(0–75)	≥ 26 severe, 9–25 moderate
Intrusion	11	0	2	1	(0–35)	-
Avoidance	9	0	0	7	(0–40)	-
SE-28	18	19	16	24	(7–28)	-
DT	8	6	8	3	(0–10)	≥ 5

Note. BSI-18 = Brief Symptom Inventory–18; HADS = Hospital Anxiety and Depression Scale; CIS = Checklist Individual Strength; CWS = Cancer Worry Scale; IES = Impact of Event Scale; SE-28 = Self-Efficacy Scale–28; DT = distress thermometer.

Reliable Change Index value > 1.69, indicating a reliable change from baseline ($p < .05$).

Table 3

EORTC Outcome Variables at Four Time Points (T1, T2, T3, T4), Ranging From 0 to 100 and Standard Deviations (*SDs*) of a Norm Group

	Baseline (T1)	Postintervention (T2)	7-months follow-up (T3)	14-months follow-up (T4)	<i>SD</i> of norm group ^
EORTC-C30					
Cognitive functioning †	100	100	100	100	23.7
Emotional functioning †	58.3	100 ^c	91.7 ^c	91.7 ^c	20.3
Role functioning †	83.3	83.3	83.3	83.3	32.6
Social functioning †	66.7	100 ^c	83.3 ^b	83.3 ^b	28.9
Physical functioning †	66.7	73.3 ^a	66.7	73.3 ^a	26.0
Quality of life †	50	83.3 ^c	75 ^c	66.7 ^b	23.8
Financial difficulties #	0	0	0	0	24.7
Dyspnea #	0	0	0	0	26.6
Pain #	66.7	16.7 ^c	66.7	33.3 ^c	28.3
Fatigue #	11.1	0 ^b	44.4 ^c	22.2 ^b	27.3
Insomnia #	33.3	0 ^c	0 ^c	0 ^c	30.9
Appetite loss #	0	0	0	0	22.3
Nausea/vomiting #	0	0	0	0	12.4
Constipation #	0	66.7 ^c	0	0	25.2
Diarrhea #	0	66.7 ^c	0	0	29.9
EORTC CR38					
Body image †	55.6	88.9 ^c	55.6	55.6	25.0
Sexual functioning †	16.7	16.7	0 ^b	0 ^b	21.5
Sexual enjoyment †	0.0	33.3 ^c	0	0	24.4
Future perspective †	33.3	66.7 ^c	100 ^c	100 ^c	27.0
Micturition #	22.2	11.1 ^b	55.6 ^c	0 ^c	21.4
Gastrointestinal tract #	6.7	6.7	6.7	6.7	16.2
Chemo side effects #	0	0	11.1 ^b	0	17.3
Defecation #	0	0	0	0	13.1
Stoma #	57.1	19 ^c	52.4	28.6 ^c	27.3
Male sexual #	100	100	0 ^c	0 ^c	40.8
Weight loss #	0	0	0	33.3 ^c	14.3

Note. EORTC = European Organization for Research and Treatment

† Higher scores indicate better functioning/quality of life/etc.

Higher scores indicate more problems on the symptom scale.

^a 5–10 points difference from baseline indicate a small difference.

^b 10–20 points difference from baseline indicate a medium difference.

^c >20 points difference from baseline indicate a large difference.

Reliable Change Index (RCI) value > 1.69, indicating a reliable change from baseline ($p < .05$).

^ *SDs* of a sample of 76 colorectal cancer survivors (20) for the calculation of RCIs.

EORTC QLQ-C30 functioning scores increased statistically significant between baseline and all measurement times on emotional functioning (RCI_{T1-T2} = 4.19, RCI_{T1-T3} = 3.35, RCI_{T1-T4} = 3.35). On social functioning a significant improvement was found between T1 and T2 (RCI = 2.35). The global QOL increased significantly during T2 and T3 (RCI_{T1-T2} = 2.86, RCI_{T1-T3} = 2.14). The EORTC QLQ-C30 symptom scores improved significantly between baseline and T2 on pain (RCI = -3.61) and insomnia (RCI = -2.20), and worsened significantly on constipation (RCI = 5.40) and diarrhea (RCI = 4.55). During T3 and T4 the improvement on insomnia remains the same as at T2 (RCI = -2.20). The

fatigue score worsened statistically significantly (RCI = 2.49) during T3 and the pain score improved again significantly during T4 (RCI = -2.40).

Scores on the EORTC CR38 improved significantly between baseline and T2 on body image (RCI = 2.36), sexual enjoyment (RCI = 2.42), future perspective (RCI = 2.18) and stoma-related problems (RCI = -2.47). During T3, scores on future perspective and male sexual problems improved significantly (RCI = 4.36 and RCI = -4.33, respectively) and micturition problems worsened significantly (RCI = 2.75). During T4, future perspective and male sexual problems stayed improved at the same

significant levels (RCI = 4.36 and RCI = -4.33, respectively) and weight loss worsened significantly (RCI = 4.13).

Qualitative Outcomes

Therapeutic alliance. The patient rated the therapeutic relationship on the WAI as high overall with a 4.5/5. The subscales agreement on therapy tasks, agreement on goals, and affective bond all scored high rates of 5, 4.5, and 4, respectively.

Intervention evaluation. The total treatment satisfaction was rated high (8/10) immediately posttreatment. Also, the other treatment satisfaction and treatment efficacy evaluation items were rated high overall with 3/4 or 4/4. Two questions were rated low (1/4): “The treatment was a fixed part of my daily life” and “The treatment led to less pain.” Overall user-friendliness of the CORRECT website was rated highly (8/10). Questions about the layout of the website and usefulness of different parts of the treatment were all answered with fairly (3/4) or very (4/4) useful. Mr. A answered that he found the duration of the treatment a little long (4/6) and that he didn’t spend a lot of time on the computer during treatment (4/6). A preference ranking of possible treatment choices resulted in the following order: (a) a website in combination with F2F consultations with a psychologist, (b) consultations with a psychologist only (without a website), (c) a website combined with digital consultations with a psychologist only (no F2F), and (d) a website without any consultation with a psychologist.

Interview

Therapeutic alliance. Mr. A. appreciated the way the therapist welcomed him and the pleasant atmosphere “felt like coming home” to him. During the sessions he felt that she explained topics clearly to him, leading to a relief after every consult. He described the beginning of the psychological treatment as revealing: “I got to know that I should set a lot of things out of my mind and sort out some ideas to eventually be able to find my way back to who I was before the disease.” Throughout the treatment he felt motivated to persevere even in challenging situations. He valued the trust in their therapeutic relationship and never experienced problems.

Treatment effectiveness and satisfaction. The treatment helped Mr. A to process his experience of cancer and realize that he was cured. He also realized that he would be able to live with the consequences, deal with his limitations, and could “simply continue [his] life again.” Most important to him was that he learned to talk with others about the disease and began to accept his limitations. Furthermore, he no longer feared medical

follow-up appointments and was able to start voluntary work again. Mr. A said that he talked briefly to his therapist about his sexual problems and learned to deal with them in a better way. He wished that his wife would have joined a session about this issue but she refused. He thought that she was too ashamed to talk about it. One personal goal he did not reach during treatment was to deal with the hesitation and shame to go swimming. From his point of view he overcame 80–85% of his challenges and the remaining 15% could not be reached yet due to physical limitations (e.g., irregular defecation), not because he missed anything in the treatment. He confirmed his satisfaction with the treatment: “All those questions that haunted me . . . I was able to leave that period behind me.”

Intervention evaluation. Mr. A reported that the treatment answered his questions and needs. He especially wanted to know information about the cancer and how to cope following medical treatment. He also appreciated the option to have sessions together with his wife even though he did not make use of this option. He thought that some website assignments were more helpful and useful than others—therefore, he found the repeated written cognitive restructuring assignments unnecessary. The videos of patient experiences were interesting, he could identify with interviewees, and they helped him to understand the assignments. Besides the F2F sessions he found these videos to be the most useful aspects of the treatment.

Mr. A experienced the telephone consultations substantially the same as the F2F sessions, although he would have preferred doing these sessions F2F as well. With regard to the assignments, he found it helpful that the therapist gave feedback. He appreciated that he could continue website assignments at his convenience, even after finishing the therapist-guided treatment. Because of this flexibility, he did not consider the treatment to be part of his daily routine and found this a positive aspect of the intervention. He found the amount of time spent on the computer as acceptable. Overall, he liked the way the treatment was coherent: “F2F sessions, telephone consultations and website assignments complemented each other. It was just right.” Mr. A expressed that he would strongly prefer the current design of the treatment (website and F2F sessions) because when using a website only, he would miss the feedback of the therapist.

Discussion

This case study gives an in-depth description of bCBT designed for treating high distress in CRCs. Based on problems that patient Mr. A reported at baseline, the “distress due to physical consequences” and “anxiety” modules were chosen together with the

cognitive-behavior therapist for his treatment. For Mr. A, this tailored treatment resulted in a significant reduction of postintervention distress and the majority of other symptoms. The intervention effects during follow-up were inconsistent. Mr. A's distress reduction was not sustained on the primary outcome, whereas his anxiety improved significantly (BSI) and clinically (HADS). This might demonstrate that the intervention target—the use of the “anxiety” module—was effective as expected.

The increase of distress (BSI) during follow-up might be explained by the significant increase in somatic complaints reflected on the somatization subscale. Mr. A reported many physical consequences like pain, problems with his stoma, and fatigue. Although in literature current pain interference has been found as a predictor of depression in cancer survivors (Bamonti et al., 2018), Mr. A's depression score (HADS) remained below clinical levels at all follow-ups. This might be a result of the intervention since Mr. A followed the “distress due to physical consequences” module, which is focused on diminishing the influence of physical complaints on mood.

One main goal of this case study was to provide evidence for the feasibility of the CORRECT bCBT treatment protocol. Overall, the treatment duration was only 1 week longer than intended in the treatment protocol, indicating that a good adherence to the treatment schedule is possible. Although he forgot to do one website session and finished some website sessions earlier than scheduled, the patient used the website actively as intended. If patients forget website sessions repeatedly during an RCT, an automatic e-mail reminder system could be considered. By adding a website to F2F therapy, self-efficacy was intended to increase. Mr. A's sense of self-efficacy was already in a medium range at baseline and improved significantly at the last follow-up. This rather late effect might be due to the fact that self-efficacy needs to be established after someone is released from therapist guidance. Furthermore, the patient expressed his satisfaction about the blended design of the intervention, the content, and the usability of the website. In line with a review advocating the benefit of F2F contact for CRC patients, he appreciated his connection with his therapist (Son et al., 2018). This suggests that the partly online character of the intervention did not undermine the therapeutic relationship, supporting findings from previous reviews (Andersson et al., 2014; van Beugen et al., 2014; Wright et al., 2005). A review on eHealth interventions to help living with cancer confirms that additional online support seems to be beneficial in changing behavior and helping cancer survivors cope (Escriva Bouley et al., 2018). Mr. A evaluated the flexibility of online assignments as very convenient.

In line with this flexibility, Mr. A decided to engage in the third module “depression” voluntarily after finishing

the 15 weeks of therapist-guided CORRECT treatment. No severe depressive symptoms were reflected during assessments, nor did depressive problems come out to the therapist during the treatment and its evaluation. Mr. A might have chosen to do extra exercises on the CORRECT website to get support during a period of grief, since he reported struggling with the loss of a neighbor in these assignments. His voluntary engagement in the module could either reflect a great treatment motivation and/or demand for support. These issues will be further examined in an RCT (Leermakers et al., 2018).

Taking all strengths and limitations of this blended therapy into account, the intervention seemed feasible and successful for this patient. A former study showed an example of a successful bCBT for treating fear of cancer recurrence in a breast cancer survivor (van de Wal et al., 2018) and proved effectiveness in an RCT for a mixed cancer group, including 25% CRCS (van de Wal et al., 2017). These findings encourage more research on blended therapies.

An advantage of the methodology of this case study was that it included quantitative as well as qualitative analyses. The use of RCIs to analyze effect scores over time for a single person (Jacobson & Truax, 1991) can be recommended for use in other case studies. Nevertheless, the intervention effects could still not be representative for a larger cohort of CRCS and will be tested in an RCT (Leermakers et al., 2018).

In summary, the CORRECT bCBT appeared to be feasible and the results of the present case study provided initial evidence that it can reduce distress (especially anxiety), fatigue, FCR, and cancer-related distress. However, feasibility and efficacy of the CORRECT bCBT need to be confirmed in a larger group of CRCS as part of an ongoing RCT (Leermakers et al., 2018).

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This work was funded by the Dutch Cancer Society (Delflandlaan 17, 1062 EA Amsterdam, The Netherlands) (grant number KUN 2014-7155).

The authors declare that they have no conflict of interest.

Written informed consent is obtained from the participant included in this study.

The CORRECT study has received ethical approval from the CMO Arnhem-Nijmegen on the 11th of January 2016 (NL55018.091.15).

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Received: September 16, 2019

Accepted: June 2, 2020

Available online 26 August 2020