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# Development and initial evaluation of blended cognitive behavioural treatment for major depression in routine specialized mental health care

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ABSTRACT

*Background:* Blended care combines face-to-face treatment with web-based components in mental health care settings. Blended treatment could potentially improve active patient participation, by letting patients work though part of the protocol autonomously. Further, blended treatment might lower the costs of mental health care, by reducing treatment duration and/or therapist contact. However, knowledge on blended care for depression is still limited.
*Objectives:* To develop a blended cognitive behavioural treatment (bCBT) for depressed patients in an outpatient specialized mental health care centre and to conduct a preliminary evaluation of this bCBT protocol.
*Method:* A bCBT protocol was developed, taking recommendations into account from depressed patients (n = 3) and therapists and experts in the field of e-health (n = 18). Next, an initial evaluation of integrated high-intensive bCBT was conducted with depressed patients (n = 9) in specialized mental health care. Patients' clinical profiles were established based on pre-treatment diagnostic information and patient self-reports on clinical measures. Patient treatment adherence rates were explored, together with patient ratings of credibility and expectancy (CEQ) before treatment, and system usability (SUS) and treatment satisfaction after treatment (CSQ-8). During and after treatment, the blended treatment protocol was evaluated in supervision sessions with the participating therapists (n = 7).
*Results:* Seven out of nine patients started bCBT, of whom five completed ≥90% of treatment. System usability was evaluated as being above average (range 63 to 85), and patients were mostly to very satisfied with bCBT (range 16 to 32). Patients reported improvements in depression, health-related quality of life and anxiety. We observed that therapists evaluated the highly structured blended treatment as a helpful tool in providing evidence-based treatment to this complex patient group.
*Discussion:* Although no conclusions can be drawn based on the current study, our observations suggest that a blended CBT approach might shorten treatment duration and has the potential to be a valuable treatment option for patients with severe depression in specialized mental health care settings. Further exploration of the effectiveness of our bCBT protocol by means of a randomized controlled trial is warranted.


## 1. Introduction

Cognitive behavioural treatment (CBT) for depression has been studied extensively and has proved to be a clinically effective psychotherapy (Butler et al., 2006; Cuijpers et al., 2013a, b). More recently, studies have shown that CBT for depression can be effectively administered in web-based settings (Andersson and Cuijpers, 2009; Andrews et al., 2010; Kelders et al., 2015; Richards and Richardson, 2012). Furthermore, web-based treatment appears to be acceptable to both patients and therapists (Andrews and Williams, 2014; Becker and Jensen-Doss, 2013).

Although most studies focussed on patients with mild to moderate symptoms (Richards and Richardson, 2012), recent studies also show

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promising treatment effects and acceptability for patients with more severe symptoms (Andrews and Williams, 2014; Hedman et al., 2014; Ruwaard et al., 2012; Williams and Andrews, 2013). Furthermore, internet interventions guided by a professional have been shown to have similar treatment effects to face-to-face treatment (Andersson et al., 2014), although the number of studies that examined the relative efficacy of face-to-face versus online psychotherapy is limited.

An important potential benefit of web-based treatment is that it can facilitate the delivery of evidence-based treatment protocols, such as CBT (Andrews and Williams, 2014). Research suggests that only a limited amount of patients in routine practise actually receives evidence-based treatment (Gyani et al., 2014; Harvey and Gumport, 2015). This is caused both by under-treatment of mental disorders such as depression (Demyttenaere et al., 2004; Harvey and Gumport, 2015) and therapist drift from evidence-based treatment protocols (Waller, 2009). By providing CBT in a web-based format, therapist adherence to evidence-based treatment protocols can potentially be improved (Andersson, 2010; Månsson et al., 2013), because the online treatment environment provides all core treatment constructs (Andrews and Williams, 2014). In addition, online treatment is believed to improve the accessibility and affordability of evidence-based mental health care. Studies suggest that online treatments may reduce therapist time per patient, because patients are encouraged to work through the treatment protocol more autonomously, and therapists can provide feedback online instead of during face-to-face sessions at the clinic (Hedman et al., 2014; Kenter et al., 2015). This, in turn, may lower treatment costs and allow therapists to take on more patients.

Within the Dutch health care system these potential benefits are highly relevant to specialized mental health care, because mental health services in this setting focus on more complex, chronic and severe patients. Therefore, treatment costs tend to be higher compared to primary care (Spijker et al., 2013) in combination with long waiting lists due to treatment duration and limited financial resources (Bower and Gilbody, 2005; Lovell and Richards, 2000).

Despite the potential benefits of online treatment, only a small number of patients are reached with online therapies in routine practise, particularly in specialized mental health care (Bremmer and van Es, 2013; Kenter et al., 2015). A possible reason for the relatively low uptake in routine practise could be that end-users, such as patients and therapists, lack knowledge about the potential costs and benefits of online treatment (Bremmer and van Es, 2013). Further, therapists are sceptical about whether online treatment could benefit treatment outcomes compared to face-to-face treatment (Becker and Jensen-Doss, 2013).

The integration of online treatment into routine mental health care could potentially be stimulated by offering treatment in a blended format (Cuijpers and Riper, 2014). This form of treatment integrates face-to-face treatment sessions and online sessions into one treatment protocol (Riper et al., 2013). Blended treatment aims to preserve personal contact and the therapeutic relationship that is associated with stand-alone face-to-face psychotherapy, while utilizing web-based treatment to stimulate active patient participation and improve the accessibility and affordability of treatment (Kenter et al., 2015).

Another possible benefit of blended treatment is that it can facilitate increased treatment intensity, for example by adding one online session per week alongside a face-to-face session. A recent metaregression analysis (Cuijpers et al., 2013b) indicated that intensifying treatment augments the effectiveness of face-to-face psychotherapy, with a treatment intensity of two sessions per week increasing the effect size with $g = 0.45$ compared to one session per week.

Although high intensity blended treatment has not yet been studied, preliminary evidence that a blended treatment format can offer CBT effectively was provided by the uncontrolled study of Månsson and colleagues (Månsson et al., 2013), focussing on a community-based sample of patients with moderate anxiety or depression ($n = 15$). Further, a recent Delphi study suggested that blended treatment is positively perceived by patients and therapists (Van der Vaart et al., 2014).

Other available studies focussed on combined cognitive behavioural face-to-face and online treatment for depression. The results suggest that this combination treatment can achieve promising clinical results (Hickie et al., 2010; Høifødt et al., 2013; Kenter et al., 2013; Robertson et al., 2006). However, combining the two treatment formats rather than blending them into one treatment protocol can also lead to increased treatment dosage and higher costs (Kenter et al., 2015).

The current study expands on the aforementioned studies by developing a highly structured and integrated blended CBT (bCBT) protocol for depressed patients in specialized mental health care. This paper describes the development of the protocol and initial experiences with blended treatment.

## 2. Methods

### 2.1. Development of blended cognitive behavioural treatment (bCBT)

Our primary objective was to develop a bCBT protocol for depression in specialized mental health care, because, to the best of our knowledge, such a protocol was not yet available.

#### 2.1.1. Therapist and expert recommendations

In order to acquire input on how online and face-to-face treatment sessions could be integrated, we consulted CBT therapists working at a specialized mental health care centre in Amsterdam, the Netherlands, and Dutch experts in the field of web-based treatment ($n = 18$) in four two-hour group discussions. During these meetings, we discussed possible benefits and limitations of online and face-to-face sessions, and participants could express specific recommendations for the blended CBT protocol. Sessions were recorded and transcribed,[1] and minutes were taken during the sessions by the first author (LK).

Next, authors one (LK), two (JR), three (JW), four (PvO) and seven (HR) discussed the findings. Based on group consensus, the following therapist recommendations were incorporated into the treatment protocol:

- Treatment starts with a face-to-face session, in order to establish a therapeutic relationship, motivate patients for treatment and explain working with the online treatment environment to patients.
- Face-to-face sessions and online sessions are provided in equal measure (50%/50% ratio). Therapists expected that the proposed ratio would enable them to provide adequate therapist support to patients, thus promoting treatment motivation and preventing patients from dropping out of treatment.
- Face-to-face sessions focus on adapting the treatment content to individual patient needs, for example by practising skills in role plays and helping patients to identify their core problems. Online sessions are used to offer background information, record mood ratings and provide homework excercises.
- The treatment is structured as a fixed sequence of treatment modules, instead of tailoring online content to individual patients by allowing therapists and patients to choose from treatment modules and/or adjust the order of modules. This was done primarily to ensure delivery of the full CBT protocol. Therapists also noted that a flexible rather than fixed approach would

[1] Due to technical problems, the audio recordings of one therapist group-session and one expert group session were not usable.