Journal of Affective Disorders 155 (2014) 49–58

Contents lists available at ScienceDirect

Journal of Affective Disorders

journal homepage: www.elsevier.com/locate/jad

Research report

Effectiveness of Internet-based cognitive behaviour therapy for depression in routine psychiatric care

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ARTICLE INFO

Article history:
Received 21 August 2013
Received in revised form
17 October 2013
Accepted 18 October 2013
Available online 26 October 2013

Keywords:
Internet
Depression
Cognitive behaviour therapy
Effectiveness
Routine care

ABSTRACT

Background: Efficacy of guided Internet-based cognitive behaviour therapy (ICBT) for depression has been demonstrated in several randomised controlled trials. Knowledge on the effectiveness of the treatment, i.e. how it works when delivered within routine care, is however scarce. The aim of this study was to investigate the effectiveness of ICBT for depression.
Methods: We conducted a cohort study investigating all patients ($N=1203$) who had received guided ICBT for depression between 2007 and 2013 in a routine care setting at an outpatient psychiatric clinic providing Internet-based treatment. The primary outcome measure was the Montgomery Åsberg Depression Rating Scale-Self rated (MADRS-S).
Results: Patients made large improvements from pre-treatment assessments to post-treatment on the primary outcome (effect size *d* on the MADRS-S = 1.27, 99% CI, 1.14–1.39). Participants were significantly improved in terms of suicidal ideation and sleep difficulties. Improvements were sustained at 6-month follow-up.
Limitations: Attrition was rather large at 6-month follow-up. However, additional data was collected through telephone interviews with dropouts and advanced statistical models indicated that missing data did not bias the findings.
Conclusions: ICBT for depression can be highly effective when delivered within the context of routine psychiatric care. This study suggests that the effect sizes are at least as high when the treatment is delivered in routine psychiatric care by qualified staff as when delivered in a controlled trial setting.

1. Introduction

Major depression affects about 1/6 of the population during the life span, is associated with low quality of life, sleep difficulties, and a highly elevated risk of serious suicidal behaviours (Beautrais et al., 1996; Alonso et al., 2004; Fava, 2004; Kessler et al., 2005). In the treatment of depression, therapist guided Internet-based cognitive behaviour therapy (ICBT) has emerged as a promising option and has demonstrated efficacy in at least 15 randomised controlled trials conducted by independent research groups (for a review see Christensen et al., 2006; Andersson and Cuijpers, 2009; Hedman et al., 2012b; Richards and Richardson, 2012). These systematic reviews have also shown that guided ICBT tends to lead to better outcomes and fewer dropouts than unguided treatments. In short, ICBT could be described as Internet-delivered bibliotherapy with online therapist support, provided to patients who have undergone diagnostic assessment (Andersson, 2009). The most commonly used components in ICBT for depression are behavioural activation, cognitive restructuring, strategies for handling sleep difficulties, and problem solving training (e.g. Andersson et al., 2005; Perini et al., 2009; Ruwaard et al., 2009; Berger et al., 2011). Delivering CBT via the Internet has several important advantages including reduced therapist time, independence of geographic distance between patient and therapist, lower costs and thus a potential to increase accessibility to effective psychological treatment.

Even if the efficacy of ICBT has been shown in previous trials, there is a little knowledge on the treatment's effectiveness when delivered in routine psychiatric care. Investigating effectiveness is important before disseminating a new treatment on a large scale

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http://dx.doi.org/10.1016/j.jad.2013.10.023

as the generalizability of findings from RCTs can be reduced by for example recruitment of participants from non-clinical populations (Shadish et al., 2000; Hunsley and Lee, 2007). We have found only three studies reporting on effectiveness of ICBT for depression, all demonstrating that ICBT can produce large effects sizes when delivered as routine clinical care (Ruwaard et al., 2012; Watts et al., 2012; Williams and Andrews, 2013). However, these studies have investigated the effects of ICBT within delivery systems where diagnostic assessment is not carried out face-to-face at the clinic providing ICBT before treatment start. Furthermore, the dosage of treatment and involvement of therapists differed substantially between studies. In the Dutch study, therapists spent about 20 h on each patient during a median of 22 weeks (Ruwaard et al., 2012) whereas the Australian programmes consisted of six lessons with automatized responses (Watts et al., 2012; Williams and Andrews, 2013).

Since 2007 the ICBT clinic in Stockholm, Sweden, provides ICBT within routine psychiatric care (Hedman et al., 2013). The clinic operates as a conventional psychiatric outpatient clinic, meaning for example that patients upon admittance come to the clinic and undergo a diagnostic assessment conducted by a psychiatrist, that licensed psychologists manage the online treatment contact, and that the clinic assumes full responsibility for the patient while enroled. To date, more than 1200 patients have received ICBT for depression at the clinic. As far as we know, no prior study has investigated if ICBT for depression can be effective when delivered in this type of conventional routine psychiatric care setting. Considering the many advantages of ICBT and that it could be used to increase accessibility to CBT, more knowledge on its effectiveness is urgently needed.

1.1. Aim of the study

The aim of the present study was to investigate the effectiveness of ICBT for depression in a large cohort of consecutively recruited patients treated within routine psychiatric care. We predicted that patients would improve on measures of depressive symptoms. We also investigated effects on insomnia, suicidal ideation, and patient satisfaction.

2. Methods

2.1. Design

This was a cohort study investigating consecutively recruited patients ($N=1203$) who received guided ICBT for depression as routine care at a university hospital psychiatric clinic providing treatment for individuals in Stockholm County, Sweden. All patients who commenced treatment since the opening of the ICBT clinic were included in the study. A within-group design with repeated measurements was used. The study was approved by the Regional Ethics Review Board in Stockholm, Sweden.

2.2. Sample and recruitment

Table 1 presents the characteristics of the patients who had been accepted for treatment at the ICBT clinic at the time of data extraction and thus included in this study, i.e., they commenced treatment in the time period between November 2007 and June 2013. The general guidelines for assessing suitability for treatment at the ICBT clinic were that patients had to (a) have a diagnosis of DSM-IV major depression according to the Mini International Diagnostic Interview (MINI; Sheehan et al., 1998), (b) agree not to undergo any other psychological treatment for the duration of ICBT, (c) have a stabilised dose of psychiatric medication for four weeks if on medication, (d) be able to write and read in Swedish, (e) to be ≥ 18 years old, and (f) not present with other psychiatric difficulties (e.g. on-going substance abuse or a psychotic syndrome) that made ICBT an unsuitable intervention.

Table 1
Description of the participants.

Variable	Internet-based CBT cohort $N=1203$
Gender	
Women	808 (67.2%)
Men	395 (32.8%)
Age	
Mean age (SD)	37.9 (11.8)
Min–max	18–80
Occupational status	
Working 75–100%	575 (47.8%)
Working <75%	134 (11.1%)
Student	125 (10.4%)
Sick leave or disability pension	170 (14.1%)
Unemployed	102 (8.5%)
Retired	30 (2.5%)
Other or unknown	148 (12.3%)
Education	
6–9 yr in school	27 (2.2%)
Incomplete vocational or secondary school	56 (4.7%)
Vocational school	66 (5.5%)
Secondary school	240 (20.0%)
University, started but not completed studies	231 (19.2%)
University, completed studies	561 (46.6%)
Other or unknown	22 (1.8%)
Referral	
Self-referral	1100 (91.4%)
From GPs or psychiatrists	103 (8.6%)
Marital status	
Married or de facto	574 (47.7%)
Parental status	
Parent (yes)	509 (46.1%)
Depression	
Time since debut of first depressive symptoms, years (SD)	10.4 (9.9)
Global functioning	
GAF-score (SD)	62.1 (6.9)
Suicide attempts	
Previous attempts (yes)	81 (6.7%)
Psychiatric hospitalization	
Previous history of inpatient psychiatric care (yes)	68 (5.7%)
Co-morbidity	
Co-morbid anxiety disorder (yes)	297 (24.7%)

Abbreviation: CBT, cognitive behaviour therapy.

2.3. Outcome measures

2.3.1. Depressive symptoms

The primary outcome measure was the Montgomery Åsberg Depression Rating Scale Self-rated (MADRS-S; Svanborg and Åsberg, 1994). MADRS-S measures nine different symptoms characteristic for depression and the total score scale range is 0–54. In the present paper, item 9 of the MADRS-S, assessing suicide ideation and scored between 0 and 6, is reported separately. Svanborg and Åsberg (1994) showed that the test-retest reliability of MADRS-S is high ($r=0.80$–0.94) and that the scale is highly correlated ($r=0.87$) with the Beck Depression Inventory, BDI, (Beck et al., 1961). A score of 13 or higher has been suggested to distinguish persons with depression from the non-depressed (Svanborg and Ekselius, 2003).

As a complementary measure of depressive symptoms, we used the PHQ-9 (Kroenke et al., 2001). The PHQ-9 consists of nine items assessing the DSM-IV criteria of depression and the total scale range is 0–27. The scale has good psychometric properties including high test-retest reliability ($r=0.84$) and high internal