

# Computerized cognitive–behaviour therapy for anxiety and depression: a practical solution to the shortage of trained therapists

S. VAN DEN BERG<sup>1</sup> BSc, D. A. SHAPIRO<sup>2</sup> BA MSc PhD FBPsS CPsychol,  
D. BICKERSTAFFE<sup>3</sup> RMN PGrad Dip Management & K. CAVANAGH<sup>4</sup> DPhil CPsychol

<sup>1</sup>Psychologist, <sup>4</sup>Senior Psychologist, Ultrasis plc, London, UK, <sup>2</sup>Honorary Professor, University of Leeds, Leeds, UK and University of Sheffield, Sheffield, UK, and <sup>3</sup>Locality Manager, Doncaster West Community Mental Health Team, Stapleton Road Mental Health Resource Centre, Doncaster, UK

Correspondence:  
S. van den Berg  
19 Rosebery Street  
Fisher  
ACT, 2611  
Australia

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## Computerized cognitive–behaviour therapy for anxiety and depression: a practical solution to the shortage of trained therapists

Computerized cognitive–behaviour therapy (CCBT) programmes have been developed to help meet the enormous need for evidence-based psychological treatment of common mental health problems in the context of a severe shortage of trained therapists to meet that need. Randomized controlled trials have confirmed the efficacy of such programmes. We present the experience of a community mental health team (CMHT) resource centre with one such programme, *Beating the Blues*, together with outcome data on a small sample of its clients. We conclude that experience and data, taken together, demonstrate the practical benefits of CCBT in routine practice.

**Keywords:** anxiety, Beating the Blues, cognitive–behaviour therapy, computerized cognitive–behaviour therapy, computerized therapy, depression

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## Introduction

Computerized cognitive–behaviour therapy (CCBT) is attracting increasing attention in mental health care. Most recently, the National Institute for Clinical Excellence (NICE) (2002) has issued guidance indicating that this may be of value in the management of anxiety and depressive disorders. For mental health nurses and others considering the use of this technology, several questions may arise:

- Why should clinical services consider the use of CCBT?
- Is there sufficient evidence from randomized controlled trials (RCTs) to warrant belief in the efficacy of such treatment?
- How effective, in terms of achieving clinical improvement in everyday practice, is such treatment?

- What is it like to offer such treatment, in terms of practical and logistic arrangements, and client and staff experiences?

In this paper, we address these questions in relation to the experience of a secondary mental health care service that has used the CCBT programme, *Beating the Blues*.

## Why should clinical services consider the use of CCBT?

Anxiety and depression are the most common mental health problems, and the total burden they place on the health of the community and on health care services outweighs that of more severe problems such as schizophrenia (Singleton *et al.* 2001). An estimated 20% of people will suffer with anxiety and/or depression in any given year, most of whom are treated within primary care. Cli-

ents often refuse drug treatment or cease taking it. Client demand and research data alike support the provision of structured psychological treatments (Market & Opinion Research International (MORI) poll for Defeat Depression Campaign; Roth & Fonagy 1996). The National Service Framework for Mental Health (Department of Health 1999) identifies improved access to psychological treatments as a key objective. Cognitive-behaviour therapy (CBT) is the most thoroughly researched treatment of depression and anxiety (Roth & Fonagy 1996, Watkins & Williams 1998). However the availability of CBT falls far short of the demand. It is labour-intensive and typically requires 6–20 50-min sessions. There is a national shortage of trained CBT therapists from all disciplines, whose accessibility is further limited by their inequitable distribution across the country (Shapiro *et al.* 2003).

Computer-delivered CBT offers a solution to this problem. It enables the principles and methods of CBT to be made available to clients without requiring the presence of a therapist. Growing evidence supports the efficacy of computerized therapy (Kaltenthaler *et al.* 2002), and studies have found equivalent efficacy of computer-delivered and 'live' or face-to-face CBT (Cavanagh *et al.* 2003a,b). The NICE guidance identifies the potential of CCBT for anxiety and depression and recommends its evaluation in the NHS (NICE 2002). It considers the potential advantages of CCBT to include accessibility, acceptability and increased client choice, personalized treatment schedules, efficiency, availability of feedback, privacy, consistency of care and ease of data collection.

*Beating the Blues* is the most fully realized of the currently available CCBT programmes for anxiety and depression. It combines the principles and techniques of CBT with interactive computer-based multimedia technology. In each of its eight sessions, CBT principles and techniques are first explained, then illustrated by videos of five patients using them, and finally presented to the client for them to try themselves.

### Is there sufficient evidence from randomized controlled trials to warrant belief in the efficacy of such treatment?

The efficacy of *Beating the Blues* was established in a large RCT, conducted in primary care (Proudfoot *et al.* 2003). Clients who completed *Beating the Blues* showed significantly greater improvement in depression and anxiety, as well as in work and social adjustment, compared to clients receiving general practitioner (GP) treatment as usual (TAU). These improvements were maintained up to 6 months follow up. The NICE guidance (NICE 2002, p. 10) acknowledges that the clinical efficacy of *Beating the*

*Blues* has been proven by RCT. As noted in the NICE guidance, another programme, *Fearfighter*, is also supported by RCT evidence (Kaltenthaler *et al.* 2004). However, as its name indicates, this programme specifically targets anxiety disorders and is therefore of less general applicability in mental health care.

### How effective, in terms of achieving clinical improvement in everyday practice, is such treatment? What is it like to offer such treatment, in terms of practical and logistic arrangements, and client and staff experiences?

Despite recognizing that the clinical efficacy of *Beating the Blues* is established, NICE also considered that its effectiveness in routine practice was not established. There exists a need for pragmatic implementation studies to investigate the real-world value of *Beating the Blues*. The present paper addresses this issue with reference to the experiences of a community mental health team (CMHT) resource centre. Here, we describe one service's experience with the programme, from acquisition to implementation and the observed outcomes and impact of *Beating the Blues* on service provision.

#### Practicalities

*Beating the Blues* is a stand-alone computer system which is typically located within a general practice or mental health centre. It is purchased as a complete system and the price includes software, hardware, installation, training, technical and clinical support. Clients with anxiety and/or depression are assessed as suitable for the programme based on a protocol agreed by the service. Those with active suicidal plans, organic mental disorder, current diagnosis of psychosis or in the acute phase of drug or alcohol dependence are not suitable for the programme.

Once a client has been referred to *Beating the Blues*, they are given information sheets on the programme and watch a 15-min introductory video, following which their first treatment session is booked. At each of the eight sessions of about 1 h, a clinical helper, typically a receptionist, greets the client and settles them on the computer. The helper's location is made clear so that the client can find them should they require any assistance during the session. Approximately 5 min of a clinical helper's time is needed for each 1-h session of *Beating the Blues*. A dedicated room is also important, so a client can be left to work on their own without any interruption. At every session the client completes simple self-ratings, on a 0–8 scale, of anxiety, depression, and suicidal ideas. These are printed out for the

referring doctor or for whoever has clinical responsibility for the client within the service.

## Measures

Consecutive patients were screened for inclusion into the trial using the General Health Questionnaire-12 (Goldberg 1972) and demographic information was collected. Before commencing the programme, all patients were given information on the evaluation of the programme and signed a consent form in order to take part. No patients refused to take part in the study.

The CCBT programme routinely collects weekly single-item measures of anxiety and depression (from 0 not at all anxious/depressed to 8 extremely anxious/depressed).

*Clinical Outcomes in Routine Evaluation Outcome Measure (CORE-OM, CORE system group, 1998).* Consisting of 34 items, the CORE is a self-report questionnaire with subdomains for subjective well-being, problem/symptom severity, life functioning and risk to self and others.

## Treatment

*Beating the Blues*, consists of nine treatment sessions, comprising a 15-min introductory video, viewed on the computer, followed by eight interactive therapy sessions each normally taken once a week completed in the routine care setting. Each weekly session lasts about 50 min, with 'homework' projects between the sessions. Weekly progress reports, including whether the patient has expressed any suicidal intent, are generated and delivered to the GP or therapist at the end of each session. A clinical helper (generally receptionist or secretary) greets the patient and ensures that they are settled at the computer before leaving the patient to work through the programme unattended. The clinical helper's location is made clear should the patient require assistance at any time during the session. The interactive nature of the computer programme permits customization to the patient's specific needs, with each session building on the one before.

## The Doncaster experience

A nurse behavioural therapist who had seen *Beating the Blues* demonstrated at a national conference suggested a meeting to show the programme to the management of a mental health resource centre. This demonstration persuaded one of us (D.B.), the service manager, of the feasibility of implementing *Beating the Blues* and that its cost compared very favourably with face-to-face therapy. The attraction of *Beating the Blues* was that it could reduce waiting times (which were then around 18 months and

lengthening) by offering an immediately accessible, proven alternative to face-to-face therapy. D.B. welcomed the prospect of a proven new technology and wanted to encourage clients and staff to consider the widest possible range of treatment options. Further meetings resulted in the approval of a proposal to set up a six-site pilot project across Doncaster, involving five primary care practices and D.B.'s CMHT. In what follows, we focus on the experience of the CMHT with *Beating the Blues* provided at its resource centre

A key issue in the implementation of CCBT is the nature and extent of support required by clients attending for sessions with the programme. In the resource centre, support has been provided by secretarial staff, after training on the package. They spend 10–15 min at the first treatment session explaining how the programme works, including the use of passwords, printer, homework assignments, arrangements for making further appointments, trouble shooting, etc. This is considered a purely administrative support role, with the friendly customer skills of the team's administrative staff being the most appropriate for this, and clinical input not being needed at this stage. Administrative staff are also well-placed to promote a self-help, non-professionalized atmosphere around the client's use of the programme. Subsequent sessions usually entail no more than a 2–3-min reminder of the practicalities around use of the programme. Administrative staff were prepared for their role by viewing the introductory videotape seen by clients, followed by a 2-h training session provided by the supplier.

Initially there was a lot of both interest in and opposition to the programme. Most health professionals could see the benefits of the programme but there were a few who remained explicitly sceptical. Client views on the programme varied widely, from 'I need more than a computer' to 'I'll give it a try' or even, 'I like not having to talk to another person about these problems'.

In contrast to the primary care settings of Proudfoot *et al.*'s (2003) RCT, experience in Doncaster demonstrates the value of *Beating the Blues* to a secondary care service accepting referrals from GPs across a geographical area. As is well known, GPs find it hard to differentiate common mental health problems that can be managed in primary care from those requiring specialist input. In Doncaster, the availability of *Beating the Blues* has enhanced the CMHT's role as a single point of access to mental health care. The CMHT can offer, equitably across its catchment area, an evidence-based intervention to clients who would otherwise have been sent back to the GP as insufficiently severe or complex cases to be offered secondary care, given the unmanageably high demand for all psychological treatment services. Resource centre clinical staff have been able to choose, on the basis of individual client needs, between

*Beating the Blues* and other options including nurse behaviour therapists and primary care counsellors. Clinical staff estimate that 60–70% of referrals would benefit from *Beating the Blues*, and in practice about half of these commence using it. This clinical screening has also minimized the occasions on which high client scores on the *Beating the Blues* weekly rating scales have required therapist intervention.

The immediate advantages for the service soon became apparent in that reduced numbers were entering the CBT waiting list, and *Beating the Blues* enabled the service to offer immediate help to clients referred with mild to moderate anxiety and/or depression. Service providers also welcomed the fact that *Beating the Blues* encouraged the client to develop ways of helping themselves rather than to become dependent upon a therapist.

In practical terms, once the service began to feel confident about the programme, it became routine to offer it as a first line of treatment to the majority of individuals referred with mild to moderate anxiety or depression. As a way of addressing the ever-increasing waiting list for CBT, letters were also sent out to all patients on the waiting list offering *Beating the Blues* as an interim treatment. Several GPs in the surrounding area referred directly to the programme. Alongside the data collected for a multisite, formal evaluation to be reported in a future paper, informal client feedback was generally very positive, with particular mention being made of the speed and ease of access to the programme and how easy it was to use.

Few clients have commented unfavourably on their experience of using the programme, with only a single individual citing its being 'too difficult' as a reason for discontinuing its use. One difficulty of implementing *Beating the Blues* at the Doncaster resource centre has been that 52 of 115 patients (45%) starting the programme have not completed it. This is a slightly higher discontinuation rate than for other treatments. Staff have considered this matter carefully. Their view is that to consider discontinuance a failure of the programme reflects an inappropriately provider-centred rather than client-centred perspective. *Beating the Blues* is not a course of antibiotics that must be completed to be effective. Clients may choose to stop using the programme because they have gained sufficient from it rather than because it is not for them. On this analysis, the appropriate metric for evaluating the clinical effectiveness of *Beating the Blues* would not be the proportion of clients helped by being offered the full programme, but the extent of client benefit experienced per *Beating the Blues* session undertaken. Does the same metric apply to face-to-face counselling? Or is this a completely unusual concept? Patients who dropped out were not followed up at the CMHT so reasons for discontinuation were not col-

lected, however, in the RCT various reasons were given for discontinuation ranging from positive reasons (e.g. they felt better), through neutral reasons (e.g. moved out of the area) to negative reasons (e.g. they didn't feel the programme was right for them).

Overall, the centre's experience of *Beating the Blues* has been a positive one; the programme is considered to have made a real difference both to a large majority of clients that have utilized it, and to the treatment options the service can offer. Its ease of use, speed of access and proven efficacy make it an important element of the repertoire of therapy options available to the seemingly ever-growing number of individuals with common mental health problems. The impact on waiting times has been to prevent any increase beyond the pre-existing average of 1 year from initial assessment to treatment, despite an ever-increasing rate of referrals for CBT.

### Three case histories

Two individual clients illustrate favourable outcomes of both uncompleted and completed *Beating the Blues* cases observed at the Doncaster resource centre. A third client however, felt that the programme did not meet their needs at this time. Client 1 was a 66-year-old lady referred with a 4-year history of mixed anxiety and depression who had recently been prescribed antidepressant medication. She dropped out at session 3 because she felt better able to deal with her problems, reporting a drop over 4 weeks in anxiety and depression levels from 5 and 4, respectively, to 1 and 1. When it was suggested that she might benefit from completing the whole programme, she responded that the initial explanation to the root causes of her anxiety and depression, and the fact that these feelings were relatively common in the rest of the population, had provided her with answers that she had been looking for. She said that these had spurred her on to manage her situation in a different way. Without the quick access to the programme this lady would have been waiting a significant period of time to see a therapist and not have had the input she clearly required.

Client 2 was a 53-year-old man with a 4-month history of mixed anxiety and depression, who completed all eight sessions of the programme. His anxiety and depression levels dropped from a high in session 3 of 8 and 7, respectively, to 2 and 1 by the end of the programme. When asked to evaluate the programme he stated that after the initial phase of getting to grips with some of the techniques explained in the programme, he found himself looking at things in a much more rational and logical way. Before this he had a tendency to dramatize things and make mountains out of molehills, which he recognized hadn't totally disap-

**Table 1**  
CORE-outcome measure scores before and after *Beating the Blues* ( $n = 13$ )

CORE-OM scale	Before <i>Beating the Blues</i>	After <i>Beating the Blues</i>	Effect size	Significance
CORE mean	1.85	1.28	1.10	$P < 0.001$
All non-risk items	2.30	1.52	1.42	$P < 0.001$
Well-being	2.54	1.50	1.44	$P < 0.001$
Problems	2.44	1.65	1.15	$P < 0.001$
Functioning	2.07	1.39	1.24	$P < 0.005$
Risk	0.36	0.19	0.34	NS

peared, but felt he could manage his thoughts, and responses to his thoughts, more calmly, without letting small things get him down. He was particularly impressed with how easy the programme was to follow and claimed that the weekly homework had helped him stay motivated and interested in the programme thus making him turn up every week.

Client 3 was a 34-year-old married woman who was originally referred with generalized anxiety. She completed three sessions of *Beating the Blues* after which she decided to discontinue with the therapy. When asked why she wanted to stop the sessions she felt she had found some of the information useful and managed to understand a little about why she became anxious and have some control over some of her symptoms (e.g. panic attacks) but didn't think she wanted to complete all eight sessions as she didn't really see the point of interacting with a computer that couldn't take part in a conversation. It was agreed that she could restart the programme if she wanted to at a later date, also if she felt that her symptoms were causing her problems again that she could be referred to a face-to-face therapist in the team. The client was happy with the outcome.

### Outcome data

This experience of the usability and practical benefits of *Beating the Blues* at the resource centre is supported by effectiveness data on a subset of the clients who have used the programme. We present data from 13 clients as they were the only ones to return completed CORE outcome measures (Barkham *et al.* 2001) before and after treatment.

Repeated measures *t*-tests were applied to each CORE subscale outcome measure. As shown in Table 1, despite the small sample, statistically significant improvements were found in Well-being [ $t(12) = 7.675$ ,  $P < 0.001$ ], Problems [ $t(12) = 6.339$ ,  $P < 0.001$ ] and Functioning [ $t(12) = 4.502$ ,  $P < 0.05$ ]; improvements in Risk were not significant. Risk scores were expected to be too low initially to demonstrate significant change as clients at high risk were intentionally screened out. For all scales except Risk, effect sizes were substantial, at over 1 standard deviation.

**Table 2**  
Clients above CORE-outcome measure clinical cut-offs before and after *Beating the Blues* ( $n = 13$ )

CORE-OM index	Before <i>Beating the Blues</i>	After <i>Beating the Blues</i>
Well-being	11	7
Problems	11	6
Functioning	11	6
Risk	4	3
All non-risk items	11	5
Mean item score	11	5

Six month follow up data from nine patients revealed significant improvements in Well-being ( $P < 0.05$ ). Although improvements were evident in Problems, Functioning and Risk following the programme, these were found not to be significant. Table 2 shows that on all indices except Risk, 11 of 13 clients were above the clinical cut-off defined by Barkham *et al.* (2001) before undertaking *Beating the Blues*; afterwards, this proportion was reduced to about one half (either 5, 6 or 7 out of 13 on each index).

Analysis of self-reported anxiety and depression ratings from 46 patients who completed the programme revealed statistically significant improvements from session 1 to session 8 [anxiety:  $t(48) = 4.141$ ,  $P < 0.001$ ; depression:  $t(48) = 3.972$ ,  $P < 0.001$ ]. Mean anxiety and depression ratings at the first session were 5.24 and 4.76, respectively, compared with 4.15 and 3.65 at session 8.

### Conclusion

*Beating the Blues* is a new and innovative way of delivering CBT to the large number of clients with anxiety and/or depression. The present report complements the demonstration of its efficacy in the RCT by Proudfoot *et al.* (in press) by showing its practical value. This is apparent from a service's positive experience of *Beating the Blues* within its mental health resource centre, together with illustrative case histories and outcome data. This account has also provided insight into the obstacles and advantages associated with implementing *Beating the Blues* in a real-world setting. Even clients who discontinue use of the programme appear to derive benefit. As the boundaries between primary and secondary mental health care are redrawn over the coming

years, CCBT has a significant role to play at the interface, however, this comes to be defined in a given locality.

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